The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

OL. LV, No. 21 CHICAGO, ILLINOIS NOVEMBER 19, 1910

HE OPERATIVE TREATMENT OF SIMPLE FRACTURES*

A. F. JONAS, M.D.
OMAHA, NEB.

The treatment of simple fractures by the open opera- e procedure has gained much in favor *during the last* w years. In spite of the fact that surgeons have occu- d themselves much in the study of this branch of gery, *perfection has not been attained and the con-* versy still continues. Among practical surgeons of ge experience direct fixation appliances in compound ractures, where the bones are exposed, when they can- ot be kept in position by splints, have come into gen- al use. There seems to be a general unanimity of pinion that such is the best practice. But when the atter of simple fractures is presented for considera- on there is a lack of uniform opinion.

In this connection I shall draw from my own personal perience, gathered from a rather extensive service of cident surgery, extending *over a period of upwards* twenty-five years. There will be no tabulation of ases and no review of the literature, but in a brief and eneral way there will be a summary of observations d experiences regarding the management of simple ctures with special reference to the open operation d direct fixation.

CONSIDERATIONS IN REGARD TO THE OPEN METHOD

When we consider the extreme difficulty, and, in ny cases, the absolute impossibility of effecting an urate adjustment of fractured bones by manipula- n, and the uncertainty of fixing and maintaining the ken ends in perfect alignment, it would seem that must instantly and unhesitatingly decide in favor open treatment and the employment of such mechan- al devices as will positively hold in perfect position fractured bone. That this is the ideal method is ond dispute. All are agreed that, while this method ideal, it also becomes necessary that the work be done der ideal conditions, which means a perfect control asepsis, and unusual mechanical and operative skill the part of the surgeon. Any lapse in aseptic detail *more fatal to perfect union and perfect final results n a similar error in technic in abdominal* surgery, r here the lymphatics are less able to cope with ordi- ry infections than in the peritoneal cavity. In no her domain of surgery are errors in asepsis so often *nished* by failure. To accomplish these results, ined assistants and a faultless operating equipment e essential.

It at once becomes evident that it is necessary to *vide our simple fracture cases requiring treatment* into two groups: first, those that can be treated in a hospital, which comprises a small group; second, those that must be treated outside the hospital, and comprises by far the larger group.

The greater number of fractures always have been and always will be treated by the general *practitioner.* His functional results are usually good, and satisfactory to the patient, even though a skiagram would show imperfect alignment and defective adjustment. Consequently, the surgeon can never hope to attain an exclusive control of the management of fractures and the *open treatment can never become the universal treatment.*

Now, would it be desirable to do an open operation in all simple fractures? This we must answer in the negative, because many of them can be accurately and perfectly adjusted by manipulations and accurately held in place by proper retentive dressings. A Colles fracture of the wrist can nearly always be reduced if the fragments, which are often impacted, are unlocked by increasing the deformity before an attempt at replacement is made. In a Pott fracture of the ankle-joint *the bones often return to their normal position with a* snap if traction is made in the line of deformity before a reduction of the fracture is attempted, and the bones *are easily* held in position. Many transverse fractures of the tibia, and supracondyloid fractures of the femur, show very little tendency to displacement when once *properly reduced and the extremity secured in a well* fitting plaster-of-Paris cast. Therefore the most enterprising surgeon would hardly find justification for a statement that all simple fractures must be exposed by a free incision and the broken bones secured by suture or a mechanical device. Those of us who had an opportunity of examining Arbuthnot Lane's numerous skiagrams of simple fractures, on which operation had recently been done, which he exhibited before us a year ago, could not help but be impressed with the fact that some of his cases would have done quite as well if the fractures had been reduced by manipulation and the use of the same external splints that he employed to reenforce the clips and screws which he used through an incision. Experience has shown that with the open operation the external retentive and fixation appliances must be of the same design and must be applied with the same care as in cases where no open incision is made.

PHYSIOLOGIC SOFTENING OF BONE ENDS

At best, fixation appliances used to secure accurate adjustment in the open incision can be depended on only for a few days, because *the bony structure immediately* surrounding a screw or peg or wire introduced in the bone becomes loose and fails to hold in accurate apposition bone fragments unless aided by a carefully applied external splint. I had observed many years ago in cases of fracture that could not be held in good apposition, where a resort to an open incision became necessary, that after a lapse of a week or two the fractured ends rapidly underwent a process of softening. When the case came to immediate operation the bony structure was unchanged, but if the operative interference was delayed for a week or more, the fractured ends had sometimes become so soft that the bone drill could almost be forced through the bone by pressure. It was thought that this condition was pathologic and peculiar to some individuals only. These observations were used as a basis to account for non-union in bones believed otherwise to be well adjusted. I learned, however, after I had become more familiar with skiagraphic findings, that a certain amount of bone softening after fractures is physiologic. The *x*-ray shadow depends on the amount of inorganic matter present in the bone. This inorganic matter is made up of phosphate, carbonate and fluorid of calcium and a small amount of phosphate of magnesium, altogether about 67 per cent. in the normal bone. The density of the shadow seems to depend chiefly on the calcium salts (64 per cent.).

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* Read in the Section on Surgery of the American Medical Asso- tion at the Sixty-first Annual Session, at St. Louis, June, 1910.

It was observed that when a succession of skiagrams were made at intervals of several days in given cases of fracture, in each succeeding skiagram the shadow at the seat of fracture became less dense, and in one or two instances it almost disappeared. I did not at first fully appreciate the full significance of the dim shadow—not until several cases were observed in which the broken ends were so widely separated that an open operation became inevitable, and in all these cases there was an amount of softening which was in direct proportion to the time that had elapsed after the fracture. This decreasing density of the *x*-ray shadow has been observed in nearly all fractures, whether reduced or not, in which I have obtained skiagrams. The bone seems to respond promptly to traumatisms. The relative proportion of lime salts become disturbed at once, and their disappearance can be noted early. This condition of bone rarefaction, while peculiar to bone fractures, and part of the reparative process, has also been noted and described by E. R. Corson[1] as bone atrophy. He points out the fact that the bone terminals become atrophied in the presence of many chronic diseases, a process which may or may not be pathologic.

In fractures, however, we must consider these bone changes as a necessary physiologic process. While the skiagraphic observations are of recent date, the state of softening of fractured bone-ends, the multiplication of the periosteal cells, the changes in the marrow, Haversian canals and lacunæ, the development of a mass of granulations between the fractured ends and extending into the bones themselves, have for a long time been common knowledge. But this process has not always been taken into consideration by the operating surgeon, who would wire or nail or screw together all broken bones at any time or stage. In my own work I learned after several failures, that mechanical devices applied directly to the bones during the stage of active physiologic softening are often ineffective in maintaining necessary coaptation. Consequently I attempt to satisfy myself at once whether fractured bones can be adjusted manually and secured by external appliances. If this can be done, the case is treated by the closed or non-operative method. Should it be found that reduction cannot be accomplished in the usual way, or that coaptation cannot be maintained, the open or operative method is at once resorted to before the bones have undergone reparative softening.

INTERNAL FIXATION DEVICES SHOULD BE USED EARLY

At this early stage any mechanical device applied directly to the bone will maintain a position sufficiently long for all the parts concerned to adapt themselves to a correct position. That screws and wires do not maintain a firm hold until bony union is complete has bee shown in all cases in which it became necessary, eithe early or late, to remove them. All devices were perfectly loose. The lime salts in immediate contact wit all foreign bodies become absorbed so that their firm hold is lost. Consequently we can expect a maintenance of good position only until the reparative proces is fairly under way. The greatest difficulty to overcome in fractures of long bones is muscular rigidity Screws or wires, properly applied, will hold firmly until the muscular spasm is allayed. Usually wit muscular relaxation, which occurs in five to eight days in cases of immediate operation, the tendency to overlapping and angulation is arrested. Therefore, if w can secure good coaptation until the chief factors f displacement cease to be operative, we will achieve good result. Several of the many mechanical devic will do this if applied early while the bones are sti hard. Consequently it was soon learned that if an ope operation is to be done, it should be done immediately.

It was found that when an open operation was attempted in from two to three weeks after injury in cases of fracture of the femur with overlapping, it was difficult and often impossible to overcome the muscular contraction. The same was found to be true in fractures of the bones of the leg, the arm and the forearm. It sometimes became necessary to do tenotomies an myotomies, which are not always advisable or practicable, especially in the thigh. Consequently I attempte in all cases to determine as early as possible if the fracture could be adjusted manually and adjustment maintained by external splints. If there was a tendency to recurrence of displacement or an impossibilit to correct misplacement, an open operation was do as soon as the patient could be brought into a favorable environment, which meant a hospital.

DETERMINING APPOSITION

In recent fractures of the forearm it was found p sible in some cases to manipulate the extremity whi being viewed through a fluoroscope until it was asc tained whether or not good apposition was possible. reduction was successful, the forearm was fixed w such splints as maintained correction. If I did not succeed in securing fair apposition of the fractured end and a good functional result was improbable, an ope operation was resorted to.

The same procedure was found practicable in fr ture of the humerus, a bone in which non-union is more frequent outcome than in any other. It has be asserted that non-union of the humerus is most f quently due to non-adjustment; that means that n sufficient manipulative efforts are made to secure prop reduction. Too often the attendant is satisfied to app his dressing without assuring himself that there is a end-to-end approximation of the broken fragments. I my work I do not rest content until actual crepitati can be obtained, in order that I may know that muscle, fascia or loose fragment of bone is interpos between the fractured ends. General anesthesia is sorted to in all cases in which manipulation is too pai ful or muscular rigidity marked. While it may *true that non-union is due to defective innervation, di* cases of the bone, syphilis or excessive rarefication, we must admit that a defective relation of the fragments is the prime factor for consideration. With an increasing experience I am inclined to believe that in all fractures of the humerus, and, I may add, of the femur also, general anesthesia is necessary, not only in bad displacements, but in those of very limited, or even no primary displacement. I have observed several cases in healthy and vigorous young persons, in which there existed little or no displacement and in which immobilization was easy and complete, that ended in non-union, due, no doubt, to a restricted local reaction, a defective hyperemia. The nutritive and reparative process was too slight or too short. To insure a sufficient local reaction, vigorous friction of the fragments was made by rubbing the ends on each other in cases in which there was no local swelling or hematoma. It was found that the fluoroscope was useful, in showing when reduction was secured. If it was shown that reduction was impossible or if I failed to secure distinct crepitus, an open operation was done.

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[1] Corson, E. R.: Ann. Surg., March, 1910, p. 289.

RECENT PRACTICE

For the last fifteen years all patellar fractures have been opened and wired. Since it was shown how constantly large portions of fascia were crowded between the fragments in all cases, a free transverse incision, a clipping away of all torn fascia, an accurate approximation and a securing of the fragments with wire or chromic gut, has been the practice.

The immediate reduction and fixation of overlapped fractured clavicles with silver plates and screws has become more frequent.

Fractures of the cranium, whenever accessible, have always even in the preantiseptic era, been treated by operation.

In personal work I have drifted between the two extremes. Before the mastery of antiseptics had been achieved, all open operations were feared. Only in depressed fractures of the skull and in some compound fractures was it the custom to attack the bones directly. The fear of converting a simple and non-infected fracture into an open and possibly an infected one, was so great that rather than create an infected compound fracture, one was willing to take chances on obtaining a fairly good functional result even though the fluoroscope of to-day would have indicated imperfect apposition. All simple fractures were "set" by hand, as well as possible, and retained with what was regarded as a proper and suitable dressing in all cases.

Then with the advent of the Roentgen ray good functional results were not considered sufficient, but it was insisted by many that the bones must always be brought into perfect alignment. It was urged that no longer could the surgeon bury his mistakes, for the *x*-ray never failed to reveal his errors in "bone-setting." Therefore, we drifted along with the tide of surgical sentiment and began wiring all fractures. When my enthusiasm had somewhat abated and I recalled what I had known before, that many fractures had been reduced and easily secured by the closed method, showing that a large number of operations were useless and had not added to a more perfect outcome. Then when I recalled the cases in which operation had been done under an imperfect environment and in which infection had supervened, and, of course, improvement had not resulted therefrom, I receded from my extreme position and reduced the problem to simple rules which are now the guide. They are as follows:

RULES TO BE FOLLOWED

1. All fractures that can be adjusted manually and can be fixed in a position that will insure a good functional result, even though the Roentgen rays indicate a lack of perfect end-to-end approximation, are to be treated by the closed method.
2. In all fractures with a marked deformity, such as overlapping, angulation, lack of contact of fractured surfaces, when it is apparent that union will not take place, an open operation is done.
3. In all cases in which there is an interposition of soft structures or loose bone fragments, an open operation must be done.
4. All compound fractures are treated by operation if the broken ends do not fall into easy apposition.
5. All depressed cranial fractures are cases for an open operation.
6. All spinal fractures showing symptoms of compression are cases for an open operation.

The Roentgen ray must be employed whenever possible to aid in a proper estimation of the extent and location of the fracture. It must determine for us whether bone approximation is sufficient after the fixation appliance, internal or external, has been applied.

Having determined at the earliest possible moment that manipulation is fruitless to replace the broken bones, an immediate operation should be done before the physiologic rarefying process has begun, or at least before it is very far advanced.

FIXATION MATERIALS AND APPLIANCES

During the last twenty years I have run almost the entire list of mechanical contrivances to secure accurate adjustment of fractures. The earliest experience was with silver wire. The chief objection to this material was found to be its liability to break. Often, after a prolonged operation, when accurate approximation had been obtained, and an accidental movement on the part of the assistant was made while the external splint was being applied, a distinct snapping of the wire could be felt and heard. Occasionally the wire broke after the dressing was complete, but was not discovered until an operation for non-union disclosed a broken wire. Iron wire proved to be no better. Then a change to bronze-aluminum wire was made. This material possesses a tensile strength four times that of silver, and left little to be desired so far as strength was concerned, but it was often difficult to secure and maintain apposition of the broken ends. No matter how ingeniously the wire was placed, partial displacement was the rule rather than the exception.

In several instances silkworm gut, several strands twisted, were used. The tensile strength was sufficient, but displacement could not always be prevented. Chromic gut lacked certainly of strength and its durability was uncertain.

Nails were used a number of times in oblique fractures of the tibia, but became too loose to maintain accurate apposition until bony union was complete. The same observations were made with screws that were made to pass through the bone.

Once I inserted a bone fragment that had been split off and lay loose near the seat of fracture into the medullary canal of the broken ends of a femur. This was reinforced by a bronze wire. The outcome was good. Volkmann treated a united fracture of a femur in a child by inserting into the medullary canal a piece of fresh bone taken from an amputated limb.

In one case an ivory peg in the medullary canal was used to fix an oblique fracture of the tibia. Bony union was good, but it became necessary to remove the peg later. Neither the solid ivory cylinder of Bircher nor the interosseous splint of Senn were ever employed. Gluck's work with ivory joints showed that the absorptive capacity of the tissues was inadequate to cope with such masses of foreign material.

In several instances good union was achieved with Senn's bone ferrule, but it became necessary to remove them, and their removal was not an easy task.

Parkhill's clamps did service in about a half dozen cases, but they were awkward and clumsy and danger of infection was much greater than with simpler appliances.

Finally, metallic plates, applied by means of screws directly to the bone, came up for consideration. At first steel plates similar to those now used by Lane of London were employed. It was found that the plates were so firm and unyielding that if the slightest bend occurred at the seat of fracture while the fixation dressing was being applied, the screws at one end of the plate were partially pulled out and a partial displacement of the bones occurred. The fragments, instead of being firmly fixed, sometimes became loose. This was true in fractures of the femur.

I then became acquainted with the silver bar or plate of Sick, and in this have found a material that seems to be of practical utility and free from many objections found in most other appliances. This material is obtained in bars about 12 inches in length, ½ inch in width and ⅛th inch in thickness. It contains numerous drill holes for screws. It can be cut in any length to suit a given fracture. It is sufficiently pliable to adapt itself to any inequality of the bone and possesses enough flexibility so that any accidental movement at the point of fracture does not break the plate nor loosen its screws. Should it require removal later, as most bone fixation appliances do, it is a simple operation. The plate and screws are found perfectly loose and can be removed through a short incision.

SOME DETAILS OF TECHNIC

I have endeavored to reduce my methods and technic to a state of simplicity. Nothing is introduced into the open wound that has touched the skin. Finger contact is avoided. All parts of the wound are handled with sterile instruments. In all cases in which an open operation is found necessary, three forms of material are used to insure bone coaptation, viz.: the silver plates of Sick, bronze-aluminum wire, and chromic gut, the latter only to reinforce the metallic appliance.

Brandeis Building.

ABSTRACT OF DISCUSSION

DR. E. WYLLYS ANDREWS, Chicago: The old habit of treating fractures by the closed method is so mixed with the newer method, the open treatment, that it is difficult to obtain a clear impression of what the surgery of fractures is to be in the future. If there were a man whose practice had been entirely operative, and who did not know anything about the surgery of the last 2,000 years, who knew nothing of the mechanical treatment of bone lesions, he would unquestionably evolve a system of cutting operations. It would differ radically from what we have inherited. We seem to be standing at the parting of the ways and I do not think that any one of us can tell whether it is going to lead us to the universal adoption of the open method, or to a combination of methods. The greater must include the less, however. At the present time we operate in every case of fractured patella in a normal subject with the associated danger of infection, loss of joint function, ankylosis, and possibly death. Is it not reasonable to suppose that in the presence of the lesser dangers in fractures not involving the larger joints the open method is the better and much to be preferred? We have in the Lane plates the best mechanical device for securing and restoring continuity of normal bone absolutely. A half cylinder of aluminum fitting the contour of the shaft of the bone and perforated with holes is the best appliance we have, one which has almost revolutionized the treatment of fractures of the femur, in my practice at least.

In no class of fractures are we confronted with a more difficult mechanical problem than with simple fractures of the femur. The bone is not large and the muscles are large and strong, therefore, the results from the closed method of treatment are often disappointing. Why not operate as a routine, as in a case of fracture of the patella? Repair is more speedy and the result is excellent in from four to six weeks as *against eight or ten in the old way*.

DR. HERMAN E. PEARSE, Kansas City, Mo.: In the open treatment of fractures I have found it necessary to operate about once in five cases, and most frequently in cases of fractures near the shoulder joint, near the knee, and near the ankle. I have used the method in simple fractures and in the early compound fractures, also in the very badly infected compound fractures. There is only one point in regard to which I wish to differ with Dr. Jonas, and that is as to the reduction of the bone and its consequences on the fracture. The bone is a crystallization in the tissues of lines of force, and bone atrophies from non-use whenever forces are not applied to the shaft, just as a muscle atrophies when motion is taken away. Therefore, if you bring the ends of a broken bone together under the most careful asepsis, so that there is no further oozing, and then thoroughly fix the fragments by means of internal splints, putting on only such retentive apparatus as will serve to protect the bone for the time being, and then allow the patient more or less use of the arm or leg or hand, you will not have the consequent rarefaction of bone, at least not to the degree that I have been able to ascertain by means of the Roentgen ray.

This brings us to the tremendous value of that procedure, and to the consideration of what Dr. Andrews said, that we are at *the parting of the ways. While now I operate but* once in five times, and then only in the unfavorable cases, had I the support of my own conscience and of public sentiment, I am sure that I would do away with the rarefaction of bone which comes from non-use, because, as I said, the bone is only the crystallization of lines of force applied in its use. I have seen the radiogram of a splint taken twelve years after its application, in the leg of a teamster. There were no ill results whatever in contour, size and shape of the bone were perfect, and there was no interference whatever with the function of the leg.

DR. JERE L. CROOK, Jackson, Tenn.: The very excellent paper by Dr. Jonas will no doubt call to mind the interesting symposium on this subject before this section last year led by Mr. Lane, of London. Mr. Lane said that an operation should be performed in every case of fracture, whether simple or compound. The consensus of opinion at the close of the discussion was just about what Dr. Jonas gave us to-day. Dr. Andrews says that we are standing at the parting of the ways. That is true, to a certain extent, but the subject of the treatment of fractures is one which should be discussed from the standpoint of the men who render first aid—that is, the general surgeon's standpoint. It is different in the practice of the surgical specialist. He does not have the opportunity to demonstrate his ability except in rare instances when a patient limps into his office—a crippled exponent of inefficient surgery—having been sent by the man who gave first aid and who is anxious to avoid the annoyance of a malpractice suit.

In every compound fracture, there is already a solution of continuity, and it will not add anything to the danger of sepsis or the probability of death if we treat that fracture by the open method, simply enlarging the wound already produced. We can then determine quickly and accurately what the nature of the fracture is, whether there is any interposition of muscles or ligaments, whether any blood-vessels have been torn, and we can remedy all these things, with the expectation of getting a good result afterward. Three cases under my observation at the present time have demonstrated the value of this method. In each of these cases the anterior tibial artery was cut, there was interposition of the muscular structures, and good results simply would not have been possible, except by the open method. The duration of the cases was from three to six months; the patients progressed well and made a complete recovery.

The man who renders first aid has it in his hands to produce favorable or unfavorable results. It is, therefore, incumbent on such men to use the most rigid asepsis, and be prepared to perform the operation where it is indicated; and this can be done in practically every country house, if we are careful and appreciate what asepsis means.

Dr A. F. Jonas, Omaha: In my opinion, all simple fractures will never be treated by the open method for the reason that the operative technic must be in accordance with perfect aseptic surroundings, with trained assistants and proper appliances. Those who have seen Lane operate speak especially of his aseptic technic, which is absolutely faultless. He does not introduce his finger into the wound at any time nor any instrument that has touched the skin or any thing that is of doubtful asepsis. Therefore, he has ideal results. Those of us who have had to operate much in private houses as well as in hospitals know how inadequate are the means at our command in the former; if we fail in any part of the aseptic procedure, union may be imperfect and conditions are worse than they would have been if we had treated the case by the non-operative method.

We have run the entire list of mechanical devices used to keep the bone fragments in apposition, and have finally come to use, to the exclusion of other appliances, silver plates with screws and bronze aluminum wire. Early in my experience I found that silver wire was not strong enough and often the wires broke; the fractures nearly always became displaced. I then resorted to the use of bronze aluminum wire, which has a tensile strength four times that of the silver; while the wire was strong enough a partial displacement of the fragments often occurred, no matter how the wire was applied. Then I resorted to the steel plates of Lane, and found them useful in the majority of instances, except in the case of a fractured femur or humerus, in which, if the assistant made an awkward or accidental movement while the plaster cast was applied, the screws were pulled out, and we were obliged to take off the dressing, re-open the wound and re-adjust the splint. Therefore, I now use the silver splint of Sick with four or six holes, which is flexible. It will bend rather than break or pull out and the danger of pulling out the screws, that hold the plate, is not as great as in the stiff steel plates used by Lane.

CLINICAL RESULTS OF GASTRO-ENTEROSTOMY FOR NON-MALIGNANT DISEASES*

JOHN DUDLEY DUNHAM, A.B., M.D.
Professor of Diseases of the Stomach and Dietetics, Starling-Ohio Medical College
COLUMBUS, OHIO

There have been very few accurate and thorough reports on the results of gastro-enterostomy for ulcer of the stomach.

Bettman and White[1] have collected reports of 150 cases with results after the lapse of at least one year. Bamberger[2] has studied 836 cases in which operation was performed for chronic ulcer of the stomach. The former study shows an immediate mortality of 10 per cent., the latter, 12.2 per cent. To this must be added a late mortality from complications in Bettman and White's series of 14.6 per cent. and in Bamberger's cases of 5 per cent. (complete late reports lacking in many of Bamberger's series).

We find, then a total mortality of 24.6 per cent. in one series and 17.2 per cent. in the second series. The group of 836 cases showed 74 per cent. cures; 13.4 per cent. unchanged. In the group of 150 cases there were 60 per cent. of cures and 30 per cent. of deaths, or no improvement.

The basis of the present report consists of forty-eight cases in which the patients were personally examined before operation; in all but two cases tests of the stomach contents and motility were performed. In fifteen cases examinations of stomach functions were made previous and subsequent to the operation. Forty-six patients were operated on by local surgeons, one by Dr. W. J. Mayo and one in Lausanne, Switzerland.

Fifteen patients have died, twelve within 17 days of the operation; an immediate mortality of 25 per cent.; a total mortality of 31.25 per cent; mortality since 1906, 10.41 per cent. The predominance of males (twelve males, three females), is significant. The average age is 50.5 years.

Case 8 was instructive. The patient was a man, aged 45, alcoholic, with a history of ulcer for five years with frequent severe hematemesis. Operation had been repeatedly refused. An ulcer on the anterior aspect of the stomach adjoining the pylorus was found which ruptured during manipulation. Partial gastrectomy with gastro-enterostomy was done. The patient made an uneventful recovery for fifteen days; then peritonitis developed to which he succumbed in two days. Necropsy revealed a ruptured gangrenous appendix with localized peritonitis. The site of operation was not involved. This case is an argument in favor of appendectomy with every gastro-enterostomy.

The three later deaths were due to carcinoma ventriculi in two instances, one six months, one twenty-one months after operation. In each case the patient had apparently recovered. Possibly these two ulcers had already undergone carcinomatous transformation at the time of operation. The third death resulted from recurrent hematemesis, morphinism and asthenia.

Of the fifteen fatal cases hyperchlorhydria was present in seven, anacidity in two, normal acidity in four, no determination in two. Evidence of retention of chyme was found in seven cases. Five of the patients who died had been treated medically without success. Eight patients received desultory treatment, no correct diagnosis having been made. Surgical treatment should have been given much earlier in these eight fatal cases, as shown by the advanced degree of stenosis seen at operation. Two patients (3 and 11) should not have been operated on as no stenosis was found. Recent histories have been obtained in twenty-nine of the thirty-three patients living.

Table 3 gives the data in fifteen cases in which gastric analyses were made before and at varying periods after operation. The average age at time of operation was 43.2 years. There were nine males and six females. In this group twelve had ulcer of pylorus or duodenum with stenosis; one, ulcer of pylorus without stenosis, (Case 18); another had nervous dyspepsia (Case 20) and one atony of the stomach with dilatation.

Seven patients with ulcer and stenosis made perfect recoveries, while three recovered but are obliged to abstain from acid and indigestible foods.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Bettman and White: Med. Rec., Oct. 9, 1909.
2. Bamberger, L.: Die innere und die chirurgische Behandlung des chronischen Magengeschwurs und ihre Erfolge, Julius Springer, Berlin, 1909

Another case (18). has improved, but has recurrent hematemesis and morphinism.

In Case 20 gastroplication was performed, leaving the patient with an aggravation of symptoms.

In Case 28 (nervous dyspepsia) the gastro-enterostomy has been followed by greater suffering than before the operation.

Examination after an Ewald test breakfast shows free hydrochloric acidity above 40 in six cases, between 20 and 40, or normal in two; below 20 in six; absent in one.

Hyperchlorhydria has increased after operation in three cases (Nos. 16, 19, 25). One of these patients (No. 16) has regained motor power and is free from

TABLE 1.—IMMEDIATE MORTALITY (WITHIN SEVENTEEN DAYS)*

Case.	Year.	Sex.	Age.	Diagnosis.	Gastric Findings. HCl.	Total Acidity.	Cause of Death.	Time After Operation.	Operation.
1.	1903	M.	60	Pyloric ulcer; arteriosclerosis; previous medical treatment.	80	110	Shock.	24 hours.	Gastro-enterostomy.
2.	1903	M.	56	Multiple ulcer of pylorus and duodenum; slight stenosis.	84	112	Shock.	48 hours.	Gastro-enterostomy.
3.	1904	M.	74	Ulcer of lesser curvature near pylorus; no stenosis.	65	85	Shock.	6 hours.	Gastro-enterostomy.
4.	1904	M.	51	Pyloric ulcer; stenosis; previous medical treatment.	60	80	Hematemesis.	6 days.	Gastro-enterostomy.
5.	1904	M.	63	Pyloric ulcer; stenosis.	10	20 Retention.	Vicious circle.	12 days; 6 hours after second operation.	Gastro-enterostomy.
6.	1905	M.	30	Pyloric ulcer; no stenosis.	60	84	Vicious circle.	10 days.	Gastro-enterostomy.
7.	1906	F.	30	Hour-glass stomach near pylorus.	0 Lactic.	2 Retention.	Shock.	12 hours.	Resection pylorus; *Gastro-enterostomy.*
8.	1906	M.	45	Perforating pyloric ulcer; stenosis.	43	68 Retention.	Gangrenous appendicitis.	17 days.	Resection pylorus; *Gastro-enterostomy.*
9.	1906	M.	36	Duodenal ulcer; slight stenosis.	20	34 Retention.	Perforation and peritonitis	3 days.	Gastro-enterostomy.
10.	1908	M.	65	Pyloric ulcer; old perforation; localized abscess; stenosis.	No tests.		Peritonitis.	10 days.	Gastro-enterostomy.
11.	1909	F.	35	Hematemesis; clinical diagnosis ulcer; no visible ulcer or stenosis.	No tests.		Shock.	24 hours.	Gastro-enterostomy.
12.	1910	M.	61	Pyloric ulcer (active); stenosis.	60	90	Hematemesis.	48 hours.	Gastro-enterostomy.

* Average age, 50.5 years; immediate mortality, 25 per cent.; males 10; females 2.

TABLE 2.—LATE MORTALITY *

Case.	Year.	Sex.	Age.	Diagnosis.	Gastric Findings. HCl.	Total Acidity.	Cause of Death.	Time After Operation.	Operation.
13	1901	M.	30	Active pyloric ulcer; stenosis.	0	6 Retention.	Recurrent hematemesis.	3 months.	Gastro-enterostomy.
14	1908	M.	63	Duodenal ulcer; localized ulcer;	70	85 Retention.	Carcinoma ventriculi.	6 mos. after first operation.	Gastro-enterostomy.
15	1908	F.	34	Pyloric ulcer; stenosis.	23	46 Retention.	Carcinoma ventriculi.	21 mos. after first operation.	Gastro-enterostomy.

* Total mortality 31.25 per cent.; males 12; females 3; mortality since 1906, 10.41 per cent.; seven hyperchlorhydria; four hydrochloric acid normal; two hydrochloric acid absent; two not determined.

TABLE 4.—RESULTS IN 12 CASES, 1 TO 6 YEARS AFTER OPERATION

Case.	Year.	Sex.	Age.	Diagnosis.	Operation.	Result.	Gastric Findings HCl.	Total Acidity.	Last Report After Operation. Years.
31.	1903	M.	28	Pyloric Ulcer; perigastric adhesions.	Gastro-ent.	Perfect.	22	44 No retention.	5
32.	1903	M.	45	Pyloric ulcer; stenosis.	Gastro-ent.	Improved.	30	75 Retention.	1
33.	1904	F.	31	Pyloric ulcer; stenosis.	Gastro-ent.	Improved; has hyperchlorhydria.	40	60 Retention.	2
34.	1904	M.	45	No ulcer or stenosis; nervous dyspepsia.	Gastro-ent.	No improvement; worse.	54	78 No retention.	2
35.	1904	F.	50	Pyloric ulcer; stenosis.		Recovery.	65	85 Retention.	6
36.	1905	F.	30	Pyloric ulcer; perigastric adhesions; no stenosis.	Gastro-ent.	Made worse; vomiting.	30	50 No retention.	5
37.	1905	F.	57	Pyloric ulcer; stenosis.	Gastro-ent.	Perfect.	4	10 Retention.	5
38.	1907	M.	48	Duodenal ulcer; partial stenosis.	Gastro-ent.	Perfect.	69	84 No retention.	3
39.	1908	F.	24	Pyloric ulcer; stenosis.	Gastro-ent.	Perfect.	50	80 Retention.	2
40.	1908	M.	60	Pyloric ulcer; stenosis.	Gastro-ent.	Perfect.	19	43 Retention.	2
41.	1908	F.	37	Pyloric ulcer; stenosis.	Gastro-ent.	Perfect.	50	80 Retention.	2
42.	1909	M.	59	Duodenal ulcer; stenosis.	Gastro-ent.	Perfect.	36	92 Retention.	1

TABLE 5.—SIX CASES IN WHICH LATE RESULTS COULD NOT BE SECURED

Case.	Year.	Sex.	Age.	Diagnosis.	Operation.	Result.	Gastric Findings. HCl.	Total Acidity.	Last History After Operation, Months.
43.	1905	F.	35	Ulcer lesser curvature; pyloric stenosis.	Gastro-enterostomy.	Operative Recovery.	60	80 Retention.	2
44.	1906	M.	40	Pyloric ulcer; stenosis.	Gastro-enterostomy.	Operative Recovery.	28	50 Retention.	1
45.	1907	F.	22	Pyloric ulcer; no stenosis.	Gastro-enterostomy.	No relief.	25	35 Retention.	3
46.	1907	M.	42	Duodenal ulcer; slight stenosis.	Gastro-enterostomy.	Improved.	25	40 Retention.	2
47.	1907	F.	30	Pyloric ulcer; cholelithiasis; stenosis.	Gastro-enterostomy.	Operative Recovery.	60	80 Retention.	1
48.	1909	F.	25	Pyloric ulcer; no stenosis.	Gastro-enterostomy.	Operative Recovery.	40	60 No retention.	2

symptoms when he refrains from acid and heavy foods. The second (No. 19) has retention of chyme for ten hours, a greater hyperchlorhydria with a complete recovery from all gastric disturbances.

Hyperchlorhydria has disappeared in three cases (Nos. 21, 29, 30) and the proper motor function has been restored.

Patient 20, in spite of a clinical history of ulcer with hematemesis, had no visible ulcer scar or stenosis. Five years after operation hydrochloric acidity is within normal limits and motor power is perfect.

Patient 23, who had normal acidity, has two years after operation persistence of motor insufficiency and no improvement in condition. The six patients with hypo-acidity have suffered a variety of results. Patient 17 has developed a hyperchlorhydria, has a good motor function and is free from symptoms if he abstains from acid foods.

In Cases 18, 24 and 27 the hypo-acidity has been supplanted by an absence of free hydrochloric acid. In Case 23 the hydrochloric acid has risen to a normal degree and motor power has become established, while in Case 28 the hydrochloric acid has decreased and retention of chyme continues with the patient unimproved. Before operation Patient 26 had an absence of hydrochloric acid with marked retention of chyme. The hydrochloric acid has not reappeared, drainage is now complete within the normal time.

The appearance of bile has usually been noted one hour after the test breakfast, for four months, after which it cannot be detected. Bile was found, however, in Case 18 four years after operation.

Table 4 outlines twelve cases in which results have been ascertained from one to six years after operation. Six cases are included in which operative recoveries only are procurable (Cases 31 to 48, inclusive). In this group the diagnosis is chronic ulcer of the stomach with stenosis in fourteen; chronic ulcer without stenosis in three; nervous dyspepsia in one.

The following outline shows results in the entire series of 27 patients known to be alive.

ULCER OF STOMACH OR DUODENUM WITH STENOSIS, 21	
Perfect recovery	14
Recovery (care required as to choice of food)	4
Improved	2
Unimproved	1
	21
ULCER OF STOMACH OR DUODENUM WITHOUT STENOSIS, 3	
Perfect recovery	1
Improved	1
Unimproved	1
	3
NERVOUS DYSPEPSIA, 2	
Unimproved	2
ATONY WITH DILATATION, 1	
Unimproved	1
Total	27

A definition of the term "perfect recovery" as used in this classification depends on unqualifiedly favorable answers to the following questions:

> Do you still have trouble with your stomach? Do you have any belching of gas or food? Do you vomit at all? Have you vomited or spit up any blood since the operation? How is your appetite? Do you find it necessary to eat more than three meals a day? Are your bowels regular or do you find it necessary to take physic for them?

There must also have been the ability to pursue the former vocation or avocation without disturbance.

TABLE 3.—DATA IN 15 CASES IN WHICH GASTRIC ANALYSES WERE MADE BEFORE AND AFTER OPERATION.

Case.	Year.	Sex.	Age.	Diagnosis.	Operation.	Result.	Gastric Findings—Before Operation—HCl.	Total Acidity.		After Operation—HCl.	Total Acidity.		Date Last History.	Time Since Operation, Years.
16.	1904	F.	55	Pyloric ulcer (active); stenosis and dilatation.	Gastro-ent.	Recovery, but cannot take acid foods.	90	116	Blood.	124	152	No bile.	2/ 1/1910	6
17.	1904	M.	39	Ulcer of lesser curvature at pylorus; acute perihepatitis; adhesions of stomach to abdominal wall; stenosis.	Gastro-ent.	Recovery; recurrent attacks; hyperacidity due to errors in diet.	10	25	Retention chyme.	70	85	110 c.c.; recovered one hour after meal; no bile; no retention.	3/13/1910	6
18.	1906	F.	32	Pyloric ulcer; posterior wall; no stenosis.	Gastro-ent.	Improved; occasional hematemesis; pain; morphinism.	0	24	Blood in stool; no retention.	0	10	40 c.c. recovered; no retention; bile.	3/10/1910	4
19.	1904	M.	36	Pyloric ulcer; stenosis.	Gastro-ent.	Perfect recovery; gained 10 pounds.	50	78	Retention.	54	74	Retention after ten hours.	3/20/1910	5 1/4
20.	1905	F.	28	Neurasthenia; no ulcer or stenosis demonstrable.	Gastro-ent.	Unimproved; increase of symptoms.	30	40	No retention.	20	44	40 c.c. recovered.	3/13/1910	5
21.	1906	M.	25	Pyloric ulcer; stenosis.	Gastro-ent.	Perfect recovery; gain of 40 pounds.	60	90	Retention.	30	56	No retention.	2/14/1910	2
22.	1906	M.	60	Pyloric ulcer; stenosis.	Gastro-ent.	Perfect recovery; gain of 50 pounds.	15	35	Retention.	20	40	No retention.	3/19/1910	4
23.	1908	M.	67	Duodenal ulcer; stenosis.	Gastro-ent.	Unimproved.	25	39	Retention.	30	50	Retention.	3/13/1910	2
24.	5/ 4/1909	M.	40	Pyloric ulcer, active; stenosis.	Gastro-ent.	Recovery; must eat lightly; gain of 25 pounds.	10	16	Retention.	0	27	35 c.c. recovered; bile.	4/20/1910	11/12
25.	11/ 4/1909	M.	58	Pyloric ulcer (active); stenosis.	Gastro-ent.	Improved; gain of 10 pounds.	48	55	Retention.	50	64	Retention; bile.	5/ 1/1910	1/3
26.	10/ 4/1909	M.	30	Pyloric ulcer (ant. and post.) active; stenosis.	Gastro-ent.	Perfect recovery; gain of 30 pounds.	0	40	Retention; lactic acid.	0	20	No retention.	5/ 1/1910	7/12
27.	10/16/1909	F.	54	Pyloric ulcer; peripyloritis; stenosis.	Pylorectomy; Gastro-ent.	Perfect recovery.	2	10	Retention.	0	10	No retention; bile.	4/20/1910	5/12
28.	1/10/1910	F.	36	Atony of stomach; dilatation.	Gastro-plication.	Unimproved.	18	50	Retention.	10	30	Retention; bile.	4/10/1910	1/4
29.	3/31/1910	F.	53	Duodenal ulcer; stenosis; peripyloritis.	Gastro-ent.	Perfect recovery; gained 10 pounds.	77	85	Retention.	40	60	No retention.	5/ 4/1910	1/12
30.	1906	M.	35	Duodenal ulcer; perforation; slight stenosis.	1st repair perforation: 2nd gastro-ent.	Perfect recovery.	60	80	No retention.	38	56	No retention.	4/10/1910	4

scopically, white and red blood-cells, renal epithelia and numerous granular casts. The heart was normal, the pulse [illegible] per minute; there was increased [illegible] gastric findings in vation. The usual th[illegible]ted cases of ulcer of the pylorus or ary examinatio[illegible] albumi[illegible]

	Cases.
Hyperchlorhydria (free hydrochloric acid above 40)	19
Normal acidity (free hydrochloric acid 20-40)	14
Hypoacidity (free hydrochloric acid below 20)	7
Anacidity (free hydrochloric acid absent)	3
Total	43

This makes nineteen patients with hyperchlorhydria; twenty-four patients with normal or subnormal hydrochloric acid.

CONCLUSIONS

1. Hyperchlorhydria as a symptom of chronic gastric ulcer is inconstant and should be disregarded.
2. Perfect recovery may occur when atony of the stomach has existed before the development of ulcer and motor insufficiency persists; illustrated in Case 19.
3. Many of the fatalities cited in this report would have been averted had the family physician made a diagnosis before serious complications had developed. Forty patients in this series of cases gave a history of ulcer covering five years or more before the diagnosis was made.
4. Pylorectomy offered a better prognosis for recovery in five of the fatal cases. Patients 4, 12 and 13 were lost by fatal hemorrhages from the ulcer area. Patients 14 and 15 died as a result of carcinomatous transformation of the pyloric ulcer.
5. The legitimate field for gastro-enterostomy in benign diseases of the stomach is in chronic ulcer near or below the pylorus with stenosis.

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ABSTRACT OF DISCUSSION

Dr. Judson Daland, Philadelphia: Chronic gastric ulcer often shows a period of latency so far as the symptoms are concerned, although the ulcer itself is still present. The patient seems to recover symptomatically. It is believed that no ulcer is present at all and the case is often pronounced cured. I recall one case in which the funicular ulcer was discovered and removed; this was followed by complete recovery. The cases of gastric ulcer referred to at another session of the Section in which the carcinoma was supposed to be cured three times belong to this same group. We see cases of chronic indolent ulcer in which under treatment great improvement results and the patients are supposed to be well.

Dr. Milton J. Lichty, Cleveland, Ohio: The study of these cases and the study of the statistics ought to be of great value and help to physicians. I should like to remind the members of the Section of the discussion of this subject three years ago by Dr. Paterson of London, when he spoke of the value of gastroenterostomy in connection with cases of gastric ulcer. He reminded us of the temporary benefit to be derived from gastroenterostomy when there was incomplete stenosis of the pylorus. I have watched cases since and must say that the best results of the gastroenterostomy were seen in cases in which the stenosis was almost absolutely complete. One does not really know just what to do with cases of incomplete stenosis of the pylorus. Of course, we cannot dictate to the surgeon just what shall be done at the time of operation, but it seems to me that in some cases in which a gastroenterostomy has been done, the patient's subsequent condition shows that it would have been better to have done a pylorectomy. It seems also that a pylorectomy should be the operation of choice whenever possible, and that a gastroenterostomy should only be done when there is complete stenosis of the pylorus.

Dr. John A. Witherspoon, Nashville, Tenn.: A few years ago a very prominent surgeon regarded this disease as a Case [illegible] The pendulum has swung back now, and every advanced surgeon is doubting the propriety of operating on gastric ulcer unless there are definite evidences of obstruction. I do not feel that gastric ulcer belongs to the surgeon for two reasons. Operation in my experience in the past has been unsuccessful. The patients I have had have recovered immediately, but later they had more or less trouble. Some of the bad ulcers become latent. It is extremely difficult in some cases to determine whether or not the gastric ulcer is cured; we know that often by medical treatment alone we may relieve patients symptomatically and they may get along well for months, gaining flesh. Yet the condition may remain dormant for some time only to awaken into activity again. A few years ago every case of hemorrhage from the stomach in cases of ulcer was referred to the surgeon for treatment; recently it has been found that medical treatment is better in such cases. The surgeon will not intervene now unless there is complete obstruction; then surgery may save many lives which otherwise would be sacrificed.

Dr. DeLancey Rochester, Buffalo, N. Y.: If there is impending obstruction, or actual obstruction, of course immediate operation is indicated. However, a gastroenterostomy is an operation that I believe should be avoided wherever possible. If any operation is to be done at all I should say that the one to be preferred was pylorectomy. I agree with Dr. Witherspoon that much can be done by medical and dietetic treatment in these cases and an operation should not be urged on patients with gastric ulcer unless it is absolutely necessary, because of the danger of cancer developing. This is a possibility, although a possibility *only*. Such good results are obtained from medical and dietetic treatment if continued for a sufficient length of time that operative measures should be avoided if possible.

Dr. A. J. Benedict, Buffalo, N. Y.: My experience with gastroenterostomy for either malignant or non-malignant disease of the pylorus is limited to one or two cases, because such an operation seemed inadvisable. In cases in which there is marked obstruction at the pylorus, a superior enterostomy is a good substitute for gastroenterostomy, the idea being to short circuit the stomach. In patients with serious lesions of the stomach the chances for betterment are increased if no food passes through this organ at all. In one patient, a woman on whom superior enterostomy was performed, a diagnosis of carcinoma was made. The patient was very much emaciated; there was pyloric obstruction and there was no free hydrochloric acid. I thought that I could feel the thickened pylorus and when the tube was passed, obstruction was also found at the cardiac end. The surgeon who was called in wanted to do gastroenterostomy, but it was decided that a superior enterostomy was to be preferred. On exposing the stomach there was found a small tumor at the pylorus. A section was not made, but taking it for granted that the tumor was a cancer, enterostomy was performed, and the patient was nourished through the fistula in the small intestines. I wish to emphasize that the diet should be watched with care. In the course of three or four weeks the symptoms in this patient were somewhat relieved; however, she had so much mental distress because of the fistula that we decided to close it, believing that she would die soon anyhow. That was in 1898. To our surprise, the woman made a good recovery and has remained well ever since. The tumor could not have been a cancer; just what it was I do not know.

Dr. Gustav Baar, Portland, Ore.: It seems to me that a mortality of 20 per cent. is too high in such cases. I have had sixteen patients operated on by surgeons during the last few years, and none died. Two of these cases were most remarkable. One patient was a woman of sixty, six feet tall, with a palpable tumor and with frequent hemorrhages; she was much emaciated, weighing but ninety-eight pounds. A gastroenterostomy was performed, and the surgeon thought that he was dealing with a carcinoma. I insisted, however, on the diagnosis of an indurated ulcer. There was free hydrochloric acid present. The patient took nourishment without the slightest distress, being given lamb chops on the third day after operation. At the end of two months her weight had increased to 168 pounds. This was only two years ago;

the patient, at this date, is perfectly well. [illegible] frequent the tumor was the size of the fist and appeared in a man *aged forty-five. He had repeated hemorrhages. A diagnosis* of indurated ulcer was made and a gastroenterostomy was performed. The man was absolutely cured. I believe that gastroenterostomy gives the most satisfactory results in all cases of pyloric ulcer and is a real boon to suffering humanity.

Dr. John D. Dunham, Columbus, Ohio: In regard to the symptomatic cure of these patients I wish to emphasize the fact that such patients should be followed for a number of years before any final conclusions regarding them should be considered. The surgeon who sees these cases finds the patients sufficiently recovered to leave the hospital and he cites such cases as recoveries. However, the general practitioner who follows the cases will often find recurrences. In the series of cases reported there was only one in which a secondary operation was called for. If the cases are properly selected and only those patients with stenosis are operated on, a secondary operation will rarely be needed. Attention to the diet is very important. These patients with partial or complete pyloric stenosis are starved, as a rule, and they require abundant feeding; they cannot live on slops; the choicest and best food properly prepared should be given them for many weeks. The food should be given frequently through the day and not as is customary, three times a day. In a consideration of the mortality the surgeon includes only the deaths which occur immediately after the operation, while the general practitioner and the internist follow the patient's history for several years. The mortality after gastroenterostomy should only be considered when the cases have been studied for five or six years. In the series I reported there were two cases in which perforation of the stomach occurred and two in which carcinoma developed.

BLOODLETTING IN CHILDREN *

HEINRICH STERN, M.D.
NEW YORK

HISTORY OF BLOODLETTING

The history of bloodletting prior to the nineteenth century gives but scant mention of the employment of this therapeutic measure in children. The very fact, however, that ancient and medieval medicine would under ordinary circumstances not dispense with depletion justifies us in assuming that the children were subjected to the same procedure, although little special reference to this custom can be found. In Stöffler's "Calendarium romanum magnum" (1518) and in the "Medicina magica" (1568) it is stated that astrology, which influenced and pervaded the entire theory and practice of medicine of the times, accepted the theory that, according to situation and conjunction of the heavenly bodies, there existed favorable, dubious and unfavorable depletion days; the various periods of life had different days on which bloodletting was to be preferentially performed.

The phase between half and full moon was deemed especially to favor depletion of young persons, but to be inimical to the operation in old people. In nurslings blood was probably never abstracted for therapeutic purposes in the olden times.

The literature of the first half of the nineteenth century contains not infrequent allusions to bloodletting in children. On the whole, the opinions of the foremost clinicians of that period were opposed to it. According to a very brief historical sketch pertaining to this epoch the amelioration of the same pathologic state as in adults. Accordingly it may be indicated in affections of theria; the latter also [illegible] organs and *diseases of the* monia and erysipelas. Bailly and the following dis- declared against the procedure in broncho[illegible]necessary (catarrhal pneumonia), but recognized its value in lobar pneumonia (fibrinous pneumonia). Among the Germans, Walther (1835), Wetzlar (1837) and Nasse (1849) expressed their opposition to blood abstraction in children. The pediatrist, Mauthner, of Vienna, on the other hand, was an energetic advocate of general and local depletion in children, especially in pneumonia and other febrile affections.

In a masterly discourse on the "Antiphlogistic Treatment in Diseases of Children," which is spread over five issues of the *Medical Record* of 1870[2] Jacobi also deals with the problem of bloodletting, and asks the question, "Are we justified in resorting to depletion at all?" He says:

> It is an established fact, or at least a very general conviction, that when we perform venesection—for the relief of pneumonia or meningitis, for example—we do not relieve the pneumonia or the meningitis itself, but we do relieve the collateral edema which has taken place in the tissues as yet uninvaded, or but partially invaded, by the inflammation. And by this relief of the collateral congestion and edema of the *meninges or of the brain, we may save a patient from approaching* dissolution. Such cases are rare; but when they occur, when we have to deal with acute edema, we must of course resort to depletion in many a case. I recall a case of convulsions in which I myself opened the jugular vein. I did not know the cause of the convulsion, but the venous congestion was so evident and so extreme, that I was led to relieve it as soon as possible. I think Trousseau relates a similar case. We know that the immediate danger in such cases depends not on the primary cause of the affection, but on the prolonged congestion, which may give rise to effusion or extravasation. To avert these I do not object to venesection—indeed, it may become imperative. . . . . But to depletion as a general antiphlogistic I must object, and this whether it be made by venesection or by local bloodletting. . . . We often hear of plethora, of surplus of blood; if such a condition ever occurs, it is certainly not in infancy. At that period any surplus would be sure to be used to build up the body, to contribute to growth.

Accordingly, Jacobi seldom resorted to depletion in inflammatory diseases of infancy and childhood, and, although meningeal and cerebral affections sometimes required direct depletion, he believes that generally, "wherever extensive derivation is really indicated," stimulation of the emunctories will be more effective than a local withdrawal of blood about the head.

The literature from 1870 to 1890 contains very little anent the subject of depletion in the young. Jewett,[3] in 1891, recommended moderate bleeding for young girls of full habit who suffer from menstrual irregularities, dysmenorrhea or temporary suspension of the flow, accompanied by flushed face, headache and a throbbing pulse. Lisner,[4] in 1897, published the following interesting case:

> A boy, 8 years old, well developed, was affected with a mild form of scarlatina. The disease had about abated when a grave nephritis supervened. The eyelids were edematous; the urine contained about 1 per cent. albumin and showed, micro-

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910

[1] Baginsky, A.: Ueber allgemeine örtliche Blutentziehungen in der Kinderheilkunde, Berl. klin. Wchnschr., 1898, p. 457; Ueber die Indicationen und Contraindicationen des Aderlasses bei Kindern, Arch. f. Kinderh., 1901, xxxi, 359.

[2] Jacobi, A.: Med. Rec., New York, 1870, v, 245.

[3] Jewett, Homer C.: North Carolina Med. Jour., June, 1891.

[4] Lissner: Beitrag zur Anwendung des Aderlasses bei Urämie, Aerztliche Prakt., 1897, No. 6.

scopically, white and red blood-cells, renal epithelia and numerous granular casts. The heart was normal, the pulse 96 per minute; there was increased tension; no temperature elevation. The usual therapeutic measures were ineffective. Urinary examination, performed daily, showed no decrease of albumin; the general condition, which was fair at the onset, became worse. Without somnolence or other distinct premonitory symptoms uremia supervened suddenly, with four rapidly succeeding convulsive attacks, one of which lasted about half an hour and affected particularly the right half of the body. Chloroform inhalations caused momentary relief but did not prevent repetition of the convulsive attacks, which ensued with greater frequency and intensity. The child was apparently moribund. As the pulse was still strong, however, venesection was resorted to, though very little hope was held out for recovery. About 100 c.c. blood were withdrawn from the right median cephalic vein. The result was more striking than any the observer had ever noticed following therapeutic intervention. Movements of the right arm were perceived even while the blood was still flowing. Three additional but very mild convulsive attacks ensued after depletion; the patient slept during the night. The subsequent course of the affection was also surprising; the urinary albumin decreased slowly but steadily; ten days later albumin was no longer found in the urine; the edema of the eyelids disappeared and the improvement in the general condition was rapid.

Marfan,[5] in 1897, dwelling on therapeutic considerations concerning the diseases of childhood, remarks that general depletion should not be employed before the fourth or fifth year of life, because abstraction of body liquids below this age is not well borne. He maintains, on the other hand, that local depletion by means of leeches or wet cupping, which often yielded excellent results, may already be applied after the fifteenth month of life. Concerning the action of topical depletion he has to say the following:

> Ces émissions agissent d'une manière complexe, à la fois par la soustraction d'une petite quantité de sang et par la révulsion, qui est très vive avec la ventouse scarifiée, très spéciale avec la sangsue.

At the onset of lobar pneumonia he applies one or two wet cups beneath the nipple of the affected side; in meningeal states and grave convulsions, one or two leeches behind the mastoid processes, or two or three wet cups on the nape of the neck will sometimes appease the untoward phenomena; and in cases of nephritis with anuria or uremia, he concludes, the application of from two to four leeches or wet cups on the lumbar region often constitutes a heroic treatment.

Murray[6] in the same year published a note of caution concerning bloodletting in children. He says that when children are bled to faintness the recovery is slow and even convulsions and death may ensue.

The most important communications on the question before us were made by Baginsky[1] in 1898 and 1901, respectively. In his first article he gives the histories of three of his cases:

CASE 1.—Girl, aged 7½, affected with grave pneumonia and arrhythmia; facial pallor, cyanosis of the lips, extreme dyspnea; orthopneic posture; pulse not palpable; diffuse rhonchi; enlargement of liver; albuminuria with numerous anatomic elements. The increasing dyspnea, threatening the life of the child, the great restlessness and fear, prompted withdrawal of 120 c.c. blood. This was very dark. Even while the process of depletion was still going on the intense cyanosis became relieved, the lips red, the pulse palpable, respiration slower. Sleep ensued. Recovery.

CASE 2.—Boy, aged 9, affected with pulmonary cirrhosis, bronchiectasis and asthmatic attacks. Improvement ensued after abstraction of from 80 to 100 c.c. blood.

CASE 3.—Girl, aged 7. In June, 1897, she was treated in the hospital for pneumonia. Since then the child was ailing. Seriously sick for the previous few days, she was again admitted to the hospital Dec. 19, 1897. Patient was suffering extreme dyspnea and was nearly dead of exhaustion; respiration involved exertion of all respiratory muscles and strong movements of larynx and thorax; wings of the nostrils far apart and moved with respiration; cyanosis of lips; pulse not palpable; dull sound in place of cardiac sounds; loud bronchial râles. Injection of camphor and mustard bath produced no improvement; venesection resorted to; median vein of right arm first, that of left arm subsequently, were incised. But a few drops of blood escaped from either vein. The child was apparently moribund, and section of the radial artery seemed justifiable. About 80 c.c. arterial blood was withdrawn. The blood was very dark. Cyanosis disappeared quickly, the pulse became palpable, dyspnea was relieved and the general condition became encouraging. The child stated that it felt better. Thoracic phenomena persisted for some time. A livid, morbilliform eruption had been present. The further course was undisturbed. The phenomena of a grave, diffuse bronchitis abated gradually; otitis media was intercurrent; the exanthema followed its normal course; the child was discharged as cured July 7, 1898.

On the strength of his clinical experience Baginsky maintains that venesection (or, if necessary, arteriotomy) must be frankly conceded to be a life-saving procedure, even in younger children, in the presence of an engorged right heart and consequent circulatory difficulty. The fact that blood abstraction may prevent a fatal issue he ascribes to its purely mechanical effect; depletion relieves the engorged and incompetent heart and reestablishes the passage of the blood through heart and lungs; however, it is not effective in every instance in which it is indicated, as the cardiac muscle may be too far deteriorated to again functionate properly.

A brief article by Gregor of the Pediatric Clinic of Breslau University, published in 1900,[7] deals with bloodletting in nurslings. He states that many physicians not rarely apply leeches in children under 1 year of age in the treatment of pneumonia or when there is suspicion of intracranial congestion. At the Breslau clinic venesection has been performed on nurslings between the fourth and eighth months of life when there existed extensive pulmonary disease. Depletion in these cases was, however, undertaken at a stage of the malady when, as a consequence of blood-pressure decline, thrombosis of the opened vein ensued rapidly and the abstraction of sufficient amounts of blood was no longer possible. However, in a 6-months-old nursling with bilateral pneumonia and imminent cardiac insufficiency, venesection was successfully applied; the child was brought through the exudative stage until, by the occurrence of a vicarious emphysema, the danger of respiratory insufficiency had been averted. Gregor is prompted by the happy issue of this case to employ venesection in nurslings affected with pneumonia (in cases in which one lung becomes rapidly involved after the other and digitalis proves ineffectual to regulate cardiac activity) at a time before the blood-pressure has markedly decreased.

In an article devoted to venesection in uremia consequental to scarlatinal nephritis, Singer,[8] in 1905, champions the therapeutic measure. He has observed nineteen cases of uremia in the course of scarlet fever. In all venesection was made use of. Fifteen patients recovered, four died. In eight instances the improvement was immediate; the convulsions ceased and consciousness reappeared at once. In children with a small, frequent pulse blood abstraction was followed by better results than when a pulse of different quality obtained. A filiform pulse contraindicates venesection. The operation, Singer maintains, is particularly called for when cerebral irritation governs the picture of the disease. When a comatose state prevails the chance for recovery is not so favorable.

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[5] Marfan, A. B.: Traité des maladies de l'enfance, Paris, 1897.

[6] Murray, C. A.: Buffalo Med. Jour., 1897-8, xxxvii.

[7] Gregor, K.: Ueber die Berechtigung des Aderlasses bei Säuglingen zu therapeutischen Zwecken, Jahrb. f. Kinderh., 1900, p. 116.

[8] Singer, G.: Venesection bei der Urämie in Folge von Scharlach Nephritis, Jahrb. f. Kinderh., 1905, p. 417.

As I am not a pediatrist, my personal clinical experience with general depletion in children is naturally limited and dates back to my days of general practice, shortly after the time of the first article of Baginsky on the subject. I have performed venesection eight times in children, viz., in two cases of bronchopneumonia, one case of lobar pneumonia and five cases of uremia. In the cases of bronchopneumonia and lobar pneumonia resort to bloodletting was had too late in the course of the disease, and all the children died. Of the five children with uremic manifestations, three survived. Concerning one of the latter cases I gather from the brief notes in my possession the following:

A girl, aged 7, exhibited the symptoms of postscarlatinal nephritis in the fourth, and those of uremia in the fifth week after the onset of the original affection. There were the usual nervous and urinary phenomena, the various edematous conditions, high vascular tension, dilated heart and subnormal temperature. To prevent edema of the lungs, which seemed imminent, blood was abstracted from the most prominent vein in each arm. Together about 60 c.c. were withdrawn. The high tension subsided rapidly, the temperature (rectal) became elevated to 100 F. within one hour, and the child was overcome with a natural sleep which lasted a few hours. After another week the child was out of danger; the swelling subsided, the urine had cleared up to a remarkable degree, and there were no undue cardiac or vascular manifestations. There was an uninterrupted recovery.

INDICATIONS AND CONTRAINDICATIONS

The opinion prevails among most of those who have contributed to the subject since the revival of bloodletting in the beginning of the nineties of the last century that early age, *per se,* offers no specific contraindication to the employment of this therapeutic procedure. In principle all these clinicians advocate bloodletting in suitable cases, although Marfan[5] does not wish to see general depletion used in children under 4 years and topical depletion in those under 15 months of life. On the other hand, the physicians of the Breslau Pediatric Clinic do not hesitate to take recourse to venesection in the nursling when it seems indicated (Gregor[7]). Singer[6] maintains that venesection is a potent and appropriate remedy in uremia arising in the course of scarlatinal nephritis, and he applies it in all types of children—the strong, the weak and the anemic; the only contraindication to bloodletting he recognizes is the presence of a filiform pulse. It goes without saying that general depletion is a much more energetic measure in children than in adults, principally for the reason that hematosis is rather an uncertain and tedious process in early life, and it must not be forgotten that the infant needs every drop of its blood at the moment the acute condition demanding depletion has subsided.

The authors cited in the foregoing have obtained beneficial results from bloodletting, especially in instances of pneumonia and of nephritis with uremic manifestations. These are also the principal affections for the treatment of which depletion has been employed in adults. Moreover, there seem to exist no special reasons why depletion in children should not be undertaken for the amelioration of the same pathologic state as in adults. Accordingly it may be indicated in affections of the heart and circulatory organs and diseases of the nervous system. Baginsky[1] recounts the following diseases in which blood abstraction may become necessary in children: pleuropneumonia, bronchopneumonia, capillary bronchitis with hyperemic manifestations, chronic heart disease, rapidly succeeding convulsions caused by hyperemia of the brain, and grave nephritides with uremic symptoms.

The action of full depletion in all these diseases is probably a mere mechanical one. In that group of affections in which orthopnea and dyspnea, regardless of their origin, dominate the acute clinical picture, the removal of adequate amounts of blood suddenly relieves the right heart, which, from the accumulation therein of venous blood, has become engorged, dilated and incompetent. In those clinical pictures in which coma or convulsive states overshadow the other manifestations bloodletting diminishes the underlying hyperemia of the brain, the irritation of the cerebral cortex and the vasoconstriction very likely in an entirely mechanical manner. Apart from the fact that a hemocathartic or detoxicating influence of bloodletting has never been fully demonstrated, the suddenness of the relief afforded in uremia stamps depletion as a mechanical or physical therapeutic agent.

In both groups of syndromes danger is imminent; on the one hand impending suffocation; on the other, coma or convulsions, while pulmonary edema is threatening in either case. In all pertaining instances in which the child is apparently moribund, bloodletting is unreservedly indicated.

We know at the present day that depletion does not produce a general antiphlogistic or antipyretic effect; general bloodletting neither reduces the body temperature nor subdues inflammation. Our grandfathers in medicine considered nearly every disease to be of an inflammatory character, for which vigorous antiphlogistic treatment had to be instituted. Their antiphlogistic therapy consisted for the most part in bloodletting. Jacobi[2] has given the death-blow to the practice of general antiphlogosis by depletion in children. In the treatment of the general run of acute diseases in children and infants blood abstraction is contraindicated unless the phenomena of suffocation, pulmonary edema, coma or convulsions, demanding mechanical relief, are paramount. On the other hand, topical bloodletting may exert a local antiphlogistic effect, as Marfan[5] and others assert, for the pediatric practice. Experimental proof of this clinical observation is not lacking. Nicholas[9] has shown, in the web of curarized frogs, that clinging of leukocytes to the vessel wall and their transmigration, retardation of the blood-current and, finally, stasis are manifestations of inflammation, while the opposite phenomena follow local blood abstraction, and consist of acceleration of the circulation, cessation of transmigration of leukocytes, their detachment from the vessel wall and resumption of their movements and activity in the increased blood current.

Bloodletting in children is distinctly contraindicated in instances of chronic hydremia and the cachectic states.

AMOUNT OF BLOOD TO BE WITHDRAWN IN CHILDREN

In local depletion the amount of blood withdrawn is always small. It is generally gauged by the number of leeches which have been applied. Marfan,[5] as already

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9. Nicolas: Ueber locale Blutentziehungen als antiphlogistische Operationen nebst einschlägigen Experimenten, 1882.

mentioned, has given some practical hints as regards topical bleeding in a number of affections.

General depletion will prove of little or no avail if insufficient amounts of blood are abstracted. Yet, in children, the blood frequently ceases to flow before a sufficient quantity has been obtained. Under these circumstances it is often justifiable to resort to arteriotomy. The egress of the blood is livelier in the afternoon or evening than in the morning. Cold enhances coagulation and, hence, causes cessation of the blood flow. Baginsky[1] declares that if the blood escapes normally and without interruption the fifteenth or twentieth part of the entire blood of the child may be withdrawn with impunity. According to the same author if the entire blood of the child amounts to from one-fifteenth to one-twentieth of his body-weight, the quantities of blood shown in the accompanying table may be abstracted:

TABLE SHOWING AMOUNT OF BLOOD THAT MAY BE SAFELY ABSTRACTED AT DIFFERENT AGES, ETC.

Years of Life.	Body Weight in Kilograms.	Total amount of Blood. in Kilograms.	Amount to be Withdrawn.
One	10	0.66–0.5	45– 25 c.c.
Three	12.5	0.85–0.62	65– 45 c.c.
Five	16	1.1 –0.8	73– 50 c.c.
Seven	20	1.3 –1.	85– 50 c.c.
Ten	24.5	1.65–1.23	110– 85 c.c.
Fourteen	38.5	2.57–1.92	170–100 c.c.

These are merely approximate amounts; occasionally more blood may be withdrawn, especially in cases of uremia. In other instances a smaller depletion may be safer for the child and still be sufficient to accomplish the desired end. Singer[8] mentions, relative to scarlatinal nephritis, that the amount of blood to be removed should be in proportion to the age of the patient and the severity of the attack. If bloodletting does not yield satisfactory results, so that neither the syndrome or the patient's general condition change materially, depletion may be repeated in from twelve to twenty-four hours.

METHODS AND TECHNIC OF GENERAL DEPLETION IN CHILDREN

General depletion may be accomplished by either arteriotomy, venesection or venepuncture. Arteriotomy should be resorted to in cases of existing or imminent pulmonary edema. It should be undertaken only by one who has sufficient surgical experience. In the great majority of cases, however, the blood is withdrawn from a vein. Prior to the era of aseptic surgery phlebotomy was effected by means of a spring-lancet; in modern times the little operation is performed with the scalpel. One of the veins of the arm may be incised; the median, the median cephalic or median basilic vein are best suited for the purpose. In other instances the blood may be obtained from one of the saphenous veins in the leg. In children, especially in infants, the veins of the arms are little prominent and are more or less hidden by goodly layers of adipose tissue. Baginsky recommends the free dissection of the vein and a long incision into it. Venepuncture, whenever applicable, is that method of blood abstraction which should be given preference. On account of the little prominence of the arm veins and the comparatively extensive fatty bolster in the young subject, it is probably not possible to employ it as frequently in children as in adults. The little blood, on the other hand, which it is often possible to obtain from one vein only should prove no contraindication to the employment of venepuncture; the little puncture wound is of no account and the instrument may be inserted into a number of veins until the desired amount of blood has been secured. The advantages of venepuncture over venesection are: greater simplicity, greater safety for both patient and physician, greater cleanliness, more rapid accomplishment of the purpose, possibility of immediate intravenous saline infusion after abstraction, rapid healing of the small puncture wound. I have devised a venepuncture trocar, the description of which has already been published.[10]

The instrument is employed as follows: After the arm is corded as for venesection the thumb-rest of the trocar is held between thumb and index-finger, while the middle finger rests against the handle of the perforator to prevent it from sliding backward. The operator then thrusts the trocar directly into the most prominent vein of the forearm—the right, if possible. The puncture is made so that the point of the trocar is toward the axilla, and, although the needle points in the same direction as the blood-current, the blood flows out readily when the perforator is withdrawn beyond the outlet. A piece of rubber tubing should be attached to the outlet before the instrument is introduced into the vein. To the free end of the tubing a glass connecting tube should be fastened. The tubing and glass tube should lead into a graduated vessel, so that the operator may ascertain the amount of blood withdrawn. Immediately after depletion, when the cannula is still in position, an infusion may be administered through the same tubing and outlet. All that there is to do to accomplish this purpose is to connect the glass tube with the tubing of the vessel containing the saline solution, and to remove the material used for constricting the arm. The chance of injuring nerves and arteries is reduced to a minimum by inserting the trocar into the cephalic vein, which is not situated in as close proximity to these structures as is the median basilic, which is the vein most frequently chosen for venesection in the adult. The chance of admitting air into the vein when employing the trocar is entirely eliminated.

In the adult, bloodletting by venepuncture is one of the simplest operations imaginable. It is readily executed by any physician and I have as yet to hear the first objection to its employment by the patient or his relatives. In the child and infant the operation is a little more difficult on account of the slight prominence of the veins and the fat tissue of the arms; here the walls of the veins are not as tough as in the adult life, and great care must be exercised that the trocar needles the vein and does not penetrate it on the other side.

In concluding I wish to say that bloodletting in proper cases is probably the most potent single remedial measure which we possess, and if I again have drawn the attention of the pediatrist to this subject, it is to awaken interest in the clinical study of this old remedy through modern eyes and with modern methods of observation.

250 West Seventy-third Street.

ABSTRACT OF DISCUSSION

Dr. E. Mather Sill, New York: I can imagine that bloodletting would be very good to diminish the blood-pressure in cases of edema due to congestion. I have been accustomed to use aconite and sweating in these cases rather than bloodletting. I find that in cases of congestion due to bronchopneumonia, the old-fashioned method of cupping gives relief. Bloodletting would be contra-indicated in pneumonia, in which the children are "run down." In cases of pneumonia in children, especially babies, the patients are much affected by loss of blood and if this bloodletting is performed it seems to me that a saline infusion should always be used to take its place. I am of the opinion that it would be very important to have a standard whereby we could know just how much blood to let in certain cases according to the age and condition of the child. I should say that it would be indicated only if the child was robust and strong and contra-indicated in cases of anemia and malnutrition.

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[10] Med. Rec., New York, Dec. 23, 1905.

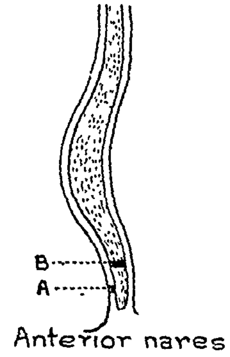
Dr. Abraham Jacobi, New York: I can only repeat what I said forty years ago (*New York Med. Record* of 1870), and forty years ago I spoke on an experience of seventeen years in practice in New York. I have not modified my opinion expressed at that time. We must not forget that we cannot say beforehand uniformly just how much blood should be taken. The patients and the cases are not alike. We should remember that the amount of blood is present in a different percentage in the adult. The baby has about 5 per cent. of its weight in blood (1 part blood in 19½ body weight) while the adult has nearly 8 per cent. (1 part blood in 13 body weight). If a child weighs 40 pounds, about 2 pounds only would be the amount of blood in that child and in that proportion only the blood should be taken. No large percentage of the amount circulating in the body should be taken away.

Dr. Heinrich Stern, New York: Dr. Jacobi has again hit the nail on its head. The amount of blood to be abstracted in the young should always be in proportion to the amount contained in the organism, and we know that the blood ratio in children is decidedly smaller than in the adult. It should never exceed in the general run of cases 50 to 100 c.c.

AN ORIGINAL METHOD FOR PREVENTION OF PERFORATION IN SUBMUCOUS RESECTION

RICHARD M. NELSON, M.D.
Eye, Ear, Nose and Throat Clinic, Colon Hospital
CRISTOBAL, CANAL ZONE

In every adverse criticism of the operation of submucous resection for the correction of deviation or deflection of the nasal septum which I have read or have heard, the greatest stress has always been laid on the danger of perforation resulting therefrom. Indeed, such great emphasis is laid on this danger, that in every such operation which I have performed the dread of this occurrence has ever been foremost in my mind.



Diagrammatic horizontal section through a septum deflected to the right. A, initial incision through mucous membrane down to cartilage. (Usual method is to cut through cartilage also here.) B, incision through cartilage only, a quarter or an eighth of an inch posterior to incision in mucous membrane. Both incisions, of course, are made from the right.

Believing that it ought to be possible to devise some modification of the usual steps of this operation rendering the danger of perforation less than was to be apprehended with existing methods, I set to work to put into practical use an idea that had often suggested itself to me in operating after the usual method. I noted on several occasions that in dissecting or separating the mucous membrane from the cartilage on both sides, although I several times made "buttonholes" in the mucous membranes of both sides in a single operation, I never had a perforation result.

In looking for an explanation for this I noted that in no case had any two "buttonholes" been made opposite one another. The idea naturally suggested itself to apply this principle in making the initial incisions. In the next operation, after making the first incision through the mucous membrane, etc., down to the cartilage, and separating the membrane from it as far back as necessary, instead of cutting through the cartilage at the same line of incision followed in going through the membrane, the cartilage was carefully cut through from one-eighth to one-fourth inch posterior to the incision through the mucous membrane. The rest of the operation was done after the usual methods. At the close of the operation, instead of the cartilage being cut off flush with the incision through the mucous membrane, there was left a projecting ledge of cartilage extending from one-eighth to one-quarter of an inch posteriorly from the line of this incision. In bringing the raw surfaces of mucous membrane together this projecting ledge of cartilage was found not only to be completely covered over, but also to appear to aid very materially in holding the edges of the wound in close apposition, acting somewhat as a natural splint.

I have tried this method in a series of cases with uniform results, without a perforation, and I would state that in my opinion with ordinary care and reasonable exercise of even moderate skill it is practically impossible to produce a perforation in using this method of making the primary incisions.

A PRACTICAL MECHANICAL METHOD OF END-TO-END ANASTOMOSIS OF BLOOD-VESSELS

USING ABSORBABLE MAGNESIUM RINGS

V. D. LESPINASSE, M.D., G. CARL FISHER, M.D., and
J. EISENSTAEDT, M.D., D.D.S.
CHICAGO

This work was done in the laboratory of the department of Experimental Surgery of Northwestern University Medical School, with the cooperation and assistance of Prof. Robert Zeit and Drs. Wolfer, Violet Deason and Solmon. It is accomplished by the use of rings of metallic magnesium.

PHYSICAL PROPERTIES AND METALLURGY OF MAGNESIUM

Magnesium is a hard, silver-white metal, having a specific gravity of 1.75 and possessing a melting point of 800 degrees. As it tarnishes in the air the bright luster is soon lost, but the change is unimportant at the ordinary temperature. At a high temperature combustion follows, with production of the well-known brilliant white light. At ordinary room temperature the action increases and hydrogen gas is slowly liberated, the hydroxid of magnesium being formed at the same time.

The action of water on magnesium is hastened by the presence of salts, such as sodium chlorid, from which it follows that in the juices of the body the solution or disappearance of the metal would be more rapid than in water alone. However, even with salts present, the action is relatively slow and the hydrogen set free is scarcely appreciable. Under proper conditions 24 milligrams of magnesium will liberate 2 milligrams of hydrogen, or 22.4 c.c. at the normal temperature of zero centigrade. This volume would be somewhat greater at body temperature; approximately, 1 mg. of the metal will liberate 1 cubic centimeter of the gas.

A 3.5 mm. ring, such as would be used on a dog's carotid, produces about 60 c.c. of gas. A 9 mm. ring, such as would be used on a human femoral, produces about 240 c.c. of gas. This gas is produced slowly and is absorbed almost as fast as produced; hence it does no harm.

Several different explanations of the action of magnesium with salt solution have been given but for all practical purposes the formation of magnesium hydroxid and hydrogen may be considered as covering the main features of the changes. The products formed are non-toxic and non-irritant.

The metal is very brittle and breaks suddenly when it is bent at a right angle, but it is quite resistant to a pull or crush.

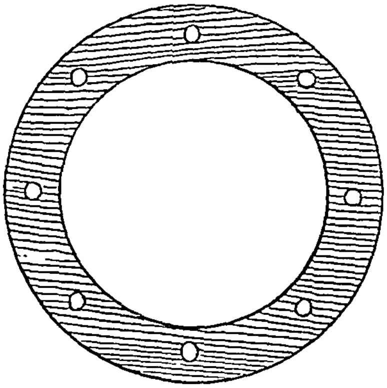


Fig. 1.—A ring, a flat piece of metallic magnesium, with edges rounded off and eight holes punched in it equidistant. These holes are counter sunk so that their edges will not cut the threads.

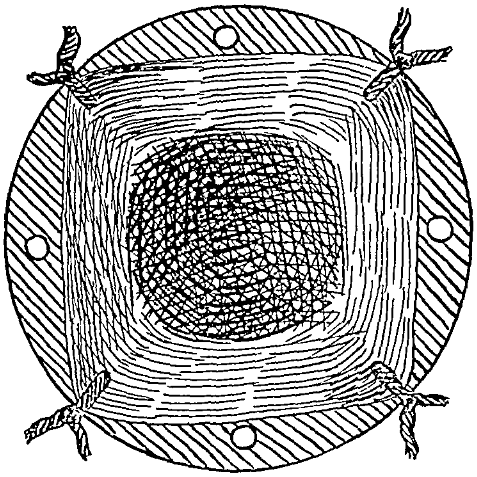


Fig. 2.—Vessel sewed into the ring, using every other hole; the sutures are triple O silk.

STERILIZATION

The rings are boiled in water from Lake Michigan, which does not contain much salt. Where the water contains any considerable amount of salts, one should use distilled water.

METHODS

Many methods of blood-vessel anastomosis have been advanced but they are all lacking in some way. The only methods at all practicable at the present time are first, the Payr method, second, the suture method.

The Payr method constricts the lumen of the vessel and is very liable to secondary thrombosis, while the technic of the suture method is very difficult. In the method here advanced these objections are overcome. There is no constriction, secondary thrombosis is impossible and the technic is simplicity itself. In a properly applied union there is not one drop of hemorrhage. One is master of the situation at all times, and does not have to try slight pressure, hot sponges, and other temporizing and uncertain methods, to stop the oozing of the blood after the clamps are removed. He knows that when the clamps are removed his junction will be perfect; if anything is wrong, *it will be easily detected during the operation and can* be remedied at once. While a suture may look ever so well, it may still bleed furiously when the clamps are removed, showing that the approximation is imperfect and the whole operation is destroyed beyond repair. Secondary attempts at repair have in my experience been failures in every instance.

TECHNIC OF MAGNESIUM RING BLOOD-VESSEL ANASTOMOSIS

The first step in the operation is the dissection and exposure of the vessel. This must be done carefully, and all collaterals must be clamped, cut and ligated. Then the loose sheath and adventitia is dissected off as completely as possible. As the blood flows through the vessel, the diameter of the vessel is accurately determined by the use of a millimeter gauge, which is a very important step in the operation, as the vessels, surgically speaking, have very little elasticity in a transverse direction; the fact is this elasticity is just sufficient to maintain the original lumen of the vessel, and allow for the everted portion necessary to make the anastomosis. The diameter of the vessel determined, a ring should be used having a lumen of the same diameter as that of the blood-vessel, while the blood is flowing through the vessel. If the vessel has been clamped and cut before it is measured the measurement should be taken proximal to the proximal clamp. Next the vessel is clamped in two places by means of the ordinary Crile clamp. These clamps are tightened just sufficiently to shut off the blood-stream, but not tightly enough to traumatize the intima; the vessel is then cut midway between the two clamps. The distance between the two clamps before cutting should be an inch and a half to two inches; this allows a sufficient working distance on each cut end of the vessel. The anastomosis can be done with much less space than this if necessary, but with a corresponding increase in the difficulties of the technic. After the vessel is cut the ends retract widely The cut ends draw themselves down into and are covered over by a portion of the sheath and adventitia; grasp this connective tissue with tissue forceps; draw it up, and cut it off flush with the cut end of each vessel. The adventitia then slips well back, and is entirely out of the way for the remainder of the operation. Each end of the blood-vessel is then washed out with a normal saline solution discharged from a large syringe. In the smaller vessels, it is best to grasp them just distal to the clamp with a Knapp trachoma roller, and thus the clotted blood is forced out of them. During this process of rolling, a stream of saline solution should be playing on the cut end of the vessel.

The vessel is now ready for the application of the rings. These rings may be used in the following ways: First, one ring and a lock-stitch; second, two rings which are sewed into the respective ends of the vessel; third, two rings and four ligatures; fourth, two rings, one of which is threaded.

First Method: One ring and lock stitch.

An appropriate-sized ring is slipped over one end of the vessel; then four guy ligatures, equidistant, are passed through the ends of the vessel; next the lock stitch is passed, first through the vessel walls, and then through the rings. The loops of the stitch are cut, and the appropriate ends tied together. The lock stitch consists of eight needles; or if the ring has more than eight holes, then have the same number of needles as there are holes in the ring. These needles are all threaded on a single thread, being spaced about eight inches apart. The two ends of the thread are passed through the same needle. In this method the ring acts only as a splint, to prevent constriction of the vessel, and every portion of the vessel wall is in the grasp of the suture; hence there is practically no hemorrhage.

Second Method: Two rings are used which are sewed into the respective ends of the vessel, by four sutures of triple-0 silk, using every other hole (Fig. 2).

In tying these sutures, care should be taken that the knot is on the outer edge of the ring, or on the opposite side of the ring from the intima of the vessel. After the rings have been sewed into the ends of both vessels, the two rings are united by four stitches passing first through one ring, then through the blood-vessel, then through the blood vessel on the opposite side, and finally through the opposite ring. These four sutures are then tied over the edge of the rings. This method is a poor one, first, because there is a liability of the suture cutting through the metal of the ring; second, it only provides four points of pressure on the ring and hemorrhage is liable to occur; third, it gives a chance for spreading of the rings at their inner edge with exposure of the sutures and consequent thrombosis.

The sutures joining the rings together had better be placed as a mattress stitch, which is done in the following way (Fig. 3):

Four strands of fine silk or linen about eight inches long are selected and armed with a needle on each end. These sutures should be perfectly smooth and withstand at least an 8-lb. pull. One of the needles is passed through the same hole in the ring through which a fine silk suture has been passed; the other end of the suture is passed through an adjoining hole in the ring, and then through the blood-vessel wall. On the other ring the sutures are passed through the same relative holes. Four of these mattress sutures are passed. After the sutures are all in place, they are pulled together and approximate the rings accurately, with no tendency for the rings to spread, and there is no liability of the sutures cutting through the large amount of metal in their grasp (Fig. 4).

Third Method: Two rings and four guy ligatures.

An appropriate-sized ring is slipped over each end of the vessel. Two ends of the vessel are then united together by four guy ligatures placed equidistant from each other. A suture is then passed through the ring, through the two ends of the vessel, immediately beneath the guy ligatures; then through a hole in the opposite ring. The suture is passed back through an adjoining hole in the second ring, through the two ends of the blood-vessel, midway between the guy ligatures and finally through the adjoining hole of the first ring. Three other sutures are passed and then the four sutures are drawn up and tied. The guy ligatures are cut and the operation is completed.

Fourth Method: Two rings, one of which is threaded.

Four strands of fine linen are armed on each end with a needle. These strands are threaded through an appropriate-sized ring in such a manner as to make four mattress stitches, having all the loops on the same side of the ring; this ring is then slipped over the cut end of the vessel; the vessel is grasped at points exactly opposite, by two very fine tenaculums; the needle directly opposite the first needle inserted is now passed through the blood-vessel, exactly between the tenaculums but on the opposite side; the remaining needles are now passed in their appropriate places. The first two needles are indicated by being grasped in marked mosquito forceps. The opposite cut end of the vessel is now grasped by two fine tenaculums at points directly opposite each other. The two marked sutures are now passed through the vessel, midway between the tenaculums and on their appropriate sides; then they are passed through their appropriate holes in the second ring; the remaining sutures are then passed in their proper places through the vessel and through their proper holes in the second ring. The tenaculums are removed and the sutures drawn up and tied.

For large vessels, namely, above 5 mm. in diameter, the fourth method is preferred; for smaller vessels, the best method is the second here mentioned, passing the sutures uniting the rings as a mattress stitch. All sutures are heavily smeared with petroleum. These sutures need not be boiled in petroleum. The petroleum is put on first to strengthen the thread and second to make it slip easily through the tissues and not drag connective tissue with the thread into the lumen of the vessel. And the petroleum is not intended, as in the suture method, to prevent thrombosis.

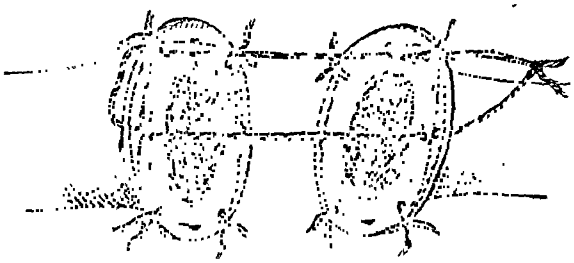


Fig. 3.—The two rings and one of the four approximating sutures of linen passed. Three others are passed in exactly the same way.

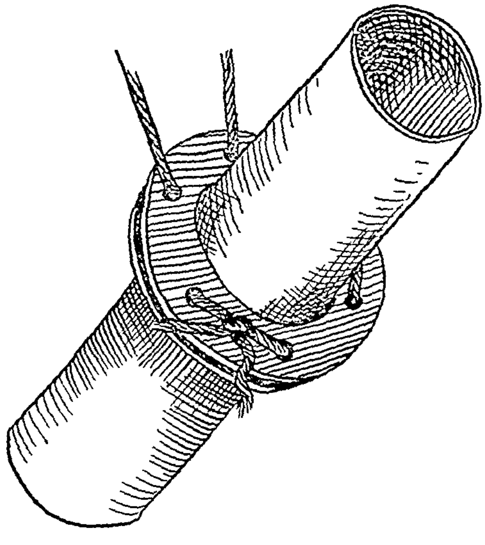


Fig. 4.—The two rings drawn together and three of the approximating sutures tied while the fourth one is drawn up ready to be tied.

After the sutures are pulled up and tied, the clamps are removed, removing the distal one first. The fascia of the sheath is then sewed over the line of union, and the operation is completed.

THE METHOD FOR REPAIR OF A LONGITUDINAL SLIT IN A BLOOD-VESSEL

In this operation the ring is replaced by a thin plate of metallic magnesium 1.5 mm. wide with holes 3 mm. apart (Fig. 6).

Technic: Clamp the vessel above and below the slit. Then locate the ends of the slit. Pass a guy ligature through the vessel walls at each end of the slit; select two plates a trifle longer than the slit; pass the needle, first through the end hole in one plate, then through both walls of the vessel a trifle beyond the end of the slit; next through the first hole in the opposite plate, then back through the second hole of the second plate, through the vessel walls on both sides of the slit; about 1 mm. from the edge, and finally through the second hole of the first plate. Taking another suture it is passed through the third and fourth holes of the plates in exactly the same way, and so on, the number of sutures depending on the length of the slit (Fig. 7).

ABSORBABILITY

The period within which the magnesium rings are absorbed varies from 80 to 100 days for complete absorption. They maintain their original shape and hold for about thirty days and then begin to break down.

TYING THE SUTURES

It has been determined that a ligature passed around a large artery and tied under five pounds pressure will shut off the blood stream but not injure the intima. A ligature passed in the same way but tied under eight pounds' pressure will cut the intima. Hence to bind the two rings together the sutures should be tied with a pressure of more than five and less than eight pounds. Throughout the operation the ends of the vessel should be washed in saline solution every few minutes. Occasionally, if the vessel is not thoroughly cleaned of connective tissue and the sutures are passed from without inward, a small tag of connective tissue may catch in the suture and be dragged through the vessel wall and project into the lumen. One point that must be carefully watched in regard to the sutures which hold the rings together is their cleanliness. These sutures must not be permitted to come in contact with blood or serum. This can be avoided by the use of gauze sponges or a piece of dentist's rubber dam appropriately placed. If the sutures are not kept clean the material adherent to them is stripped off by the blood-vessel walls as the sutures are drawn up and collects as little masses around the sutures and form the starting points for thrombi.

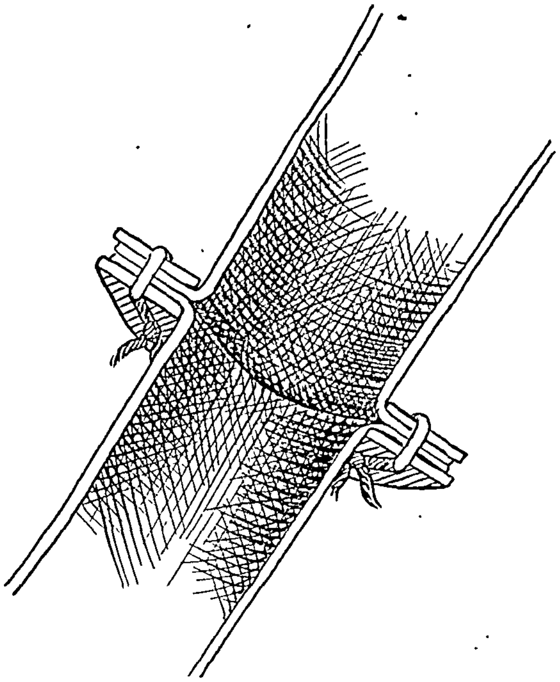


Fig. 5.—A longitudinal section of the vessel. It also shows that no foreign material of any kind comes in contact with the blood after the operation is completed.

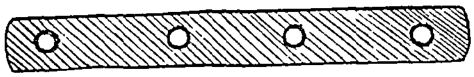


Fig. 6.—A magnesium plate suitable for repair of a lateral slit in a vessel.

THROMBOSIS

In this method there is nothing inside of the lumen of the vessels after the operation is completed; hence if trauma to the intima is avoided during the operation and the vessel is washed free from all clots and not tied tightly enough so that the rings will cut the intima where it bends outward to form the flange, thrombosis will not occur. Secondary thrombosis, such as occurs in the Payr operation from pressure necrosis, is impossible.

STRICTURE

In this method primary stricture cannot occur if the vessel is accurately measured and an appropriate-sized ring is at hand with which to make the anastomosis. Secondary stricture has never occurred in any of my experimental operations. In one specimen there was a small pouch at the site of operation.

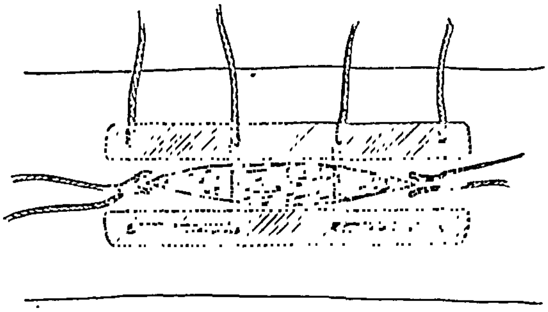


Fig. 7.—A lateral slit with a guy rope passed through each end of the slit and two mattress sutures passed through the two plates and the vessel wall ready to be drawn up and tied.

HEMORRHAGE

Primary hemorrhage should not occur. In most of the anastomoses, there is absolutely no hemorrhage, not even a drop; secondary hemorrhage has occurred only in the presence of infection.

EMBOLUS

There is danger of this occurring only when thrombosis is present; hence to avoid embolus, avoid thrombosis. Its seriousness depends entirely on the point of lodgment of the embolus.

SUMMARY

The following principles must be kept in mind when making blood-vessel anastomoses with magnesium rings:

1. The vessel must be accurately and cleanly dissected.
2. *All wound hemorrhage and oozing must be checked.*
3. All clot must be removed from the ends of the blood-vessel.
4. A proper-sized ring must be used.
5. The rings must not be tied together under more than 8-lb. pressure or less than 5 lbs.
6. Traumatism to the intima behind the line of union must be avoided absolutely.

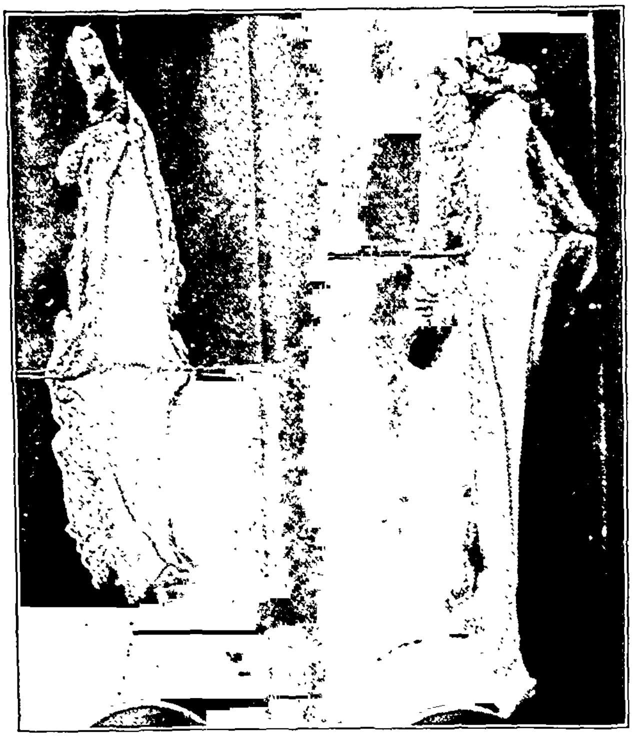


Fig. 8.—Result of anastomosis of common carotids after 100 days No clots, no thrombosis, no constriction; arteries were pulsating and spurted when cut; magnesium rings absorbed.

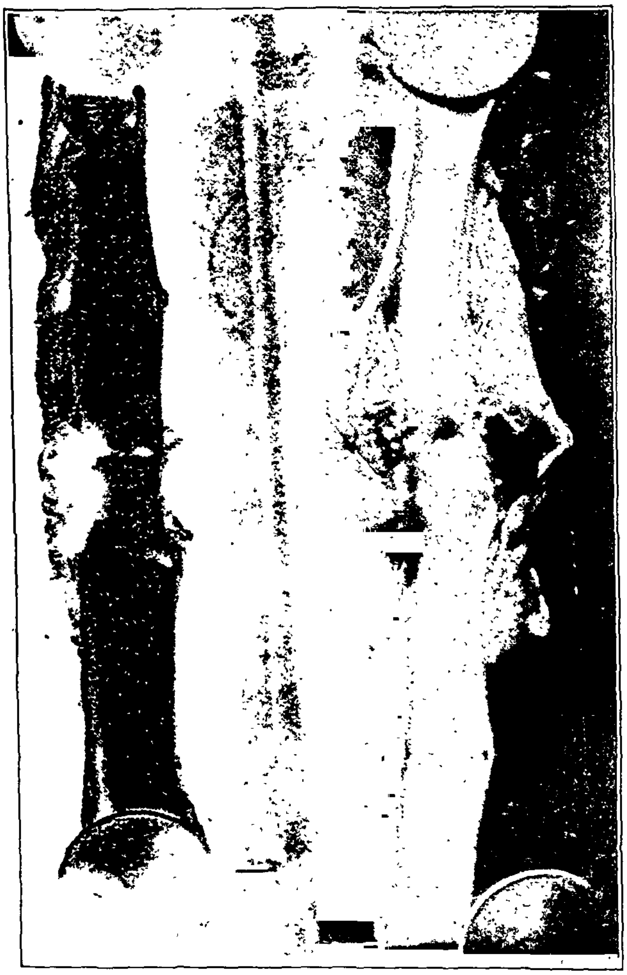


Fig. 9.—Result of common carotid operation. Dog died 36 days after operation; cause unknown. One vessel shows large gas tumor; neither showed any clot or thrombosis.

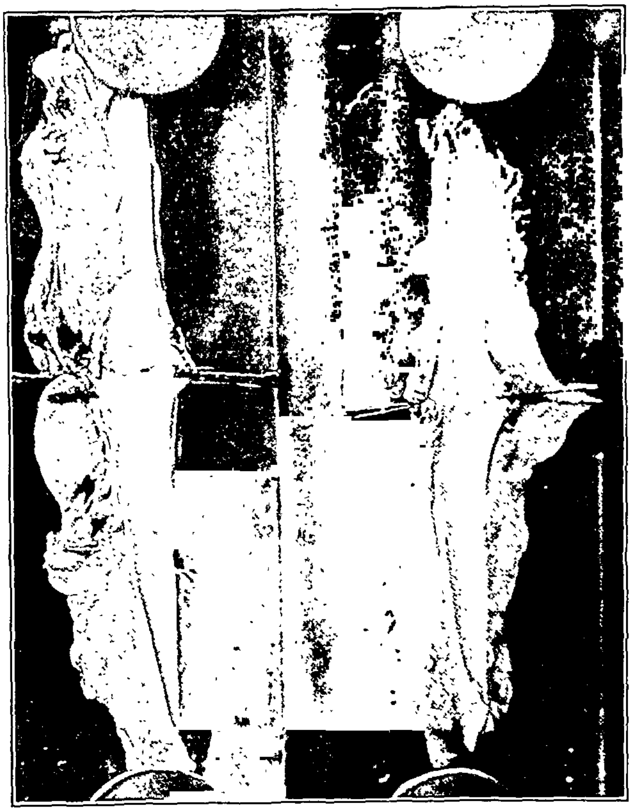


Fig. 10.—Common carotid operation. Dog killed 112 days later. The arteries were dissected out and demonstrated to be pulsating. They were clamped and cut distal to the anastomosis. In each instance the blood spurted. The vessels were then split open and mounted. *Age of operation 112 days; magnesium practically gone;* few small pieces still present; vessel smooth; no constriction.

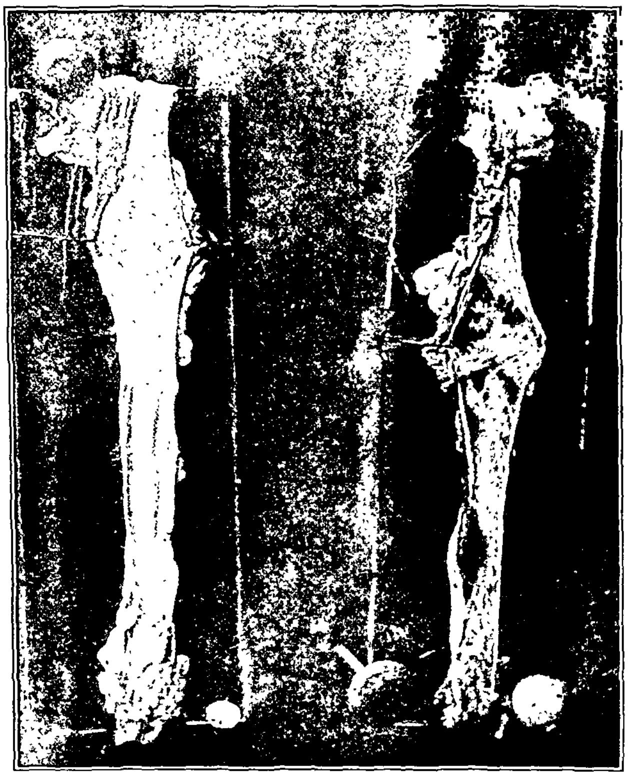


Fig. 11.—End-to-end anastomosis of external jugular vein. Operation 84 days old. Vessels smooth on the outside; blood flowing through them; magnesium rings absorbed except two small pieces in the tissue; no gas present. On opening the vessel; intima smooth and site of anastomosis determined with difficulty; 4 mm. rings used

7. Gentleness and accuracy in all manipulations is absolutely essential.
8. Perfect asepsis must be maintained.

CONCLUSIONS

The use of magnesium rings to anastomose blood-vessels makes the operation safe, certain and easy, bringing it well within the skill of the average surgeon.

At the present time this operation is applicable, and should be done, in all wounds of the large vessels, both venous and arterial, and in all false aneurisms; and in all arterio-venous aneurisms. Under these conditions the short piece of vessel containing the opening can be removed bringing the ends together and making an end-to-end anastomosis, thus reestablishing the circulation through the vessel.

72 Madison Street.

ABSENCE OF HYDROCHLORIC ACID WITH BLOOD IN THE STOMACH SECRETION (ACHLORHYDRIA HEMORRHAGICA GASTRICA) AS A SYMPTOM OF CHRONIC GASTRITIS *

JAMES TAFT PILCHER, M.D.
BROOKLYN

The purpose of the present communication is to describe a condition which has been encountered many times among the cases of stomach disease which have presented for treatment at St. Mary's Hospital of Rochester, Minn., during one and a half years, all of whom have been personally examined by me. In making these examinations some 4,000 stomach extracts after an Ewald test meal have been analyzed. Of this entire number I can recall only seven to which the term "achylia gastrica" might be applied, and there was but one case of real insufficiency of the pylorus, which was determined at operation. On the other hand, the absence of free hydrochloric acid, accompanied by occult blood, was observed in 271 instances, or approximately one in every *fifteen stomachs examined.*

In various instances every gradation between normal acidity and achlorhydria has been observed, and in yet other cases it has been possible to watch the gradual return from a condition of achlorhydria hemorrhagica back to regained normal acidity.

The anamnesis developed the fact that in 156 of the 271 cases of achlorhydria the onset of the gastric symptoms seemed to bear an immediate and direct relation to various *diseases and conditions, among which the* incidence of infectious diseases in thirty-eight cases, circulatory disturbances in twelve, postoperative development in fourteen, and derangement of the ductless glands in twenty instances deserve mention. In contradistinction to these etiologic factors determined clinically, it is very significant that in 100 cases an operation was performed while a condition of achlorhydria hemorrhagica gastrica was present. The gross pathologic findings in these showed involvement of the appendix in thirty-six cases, the gall-bladder in thirty-two cases, the gall-bladder and pancreas sixteen cases, the stomach sixteen cases. There were twelve cases in which the appendix was diseased concomitantly with the gall-bladder.

Appreciating generally the extraordinary degree of gastric disturbance which irritation in distant organs can produce, it may be considered even more than a presumptive conclusion that reflex nervous phenomena are responsible primarily for the inhibition of the production of hydrochloric acid in such instances.

The morbid anatomy of the stomach and pylorus in these patients is also of interest. Sixty-four were apparently normal. In twenty-four pylorospasm was demonstrated on the operating table, accompanying appendicitis eighteen times, and gall-bladder involvement six times. There were four cases in which Dr. Mayo deemed it advisable to cut off former gastro-enterostomies done elsewhere, there being no pathologic indication for their continuance. In two cases ulcer of the stomach was found, in one pyloric insufficiency, in three the pylorus was *markedly thickened; there was one* congenital stenosis, and one hour-glass contraction.

Regarding the pathology of the stomach mucosa in cases which do not show any free hydrochloric acid, it would be well to consider the study made by Drs. Wilson and MacCarty of 230 stomachs resected by Dr. Mayo for carcinoma.[1] In the majority of these hydrochloric acid was absent, yet in none of them was a general atrophy of the mucous membrane found. On the other hand, there was present almost without exception a marked proliferation of the mucous membrane at the margin of the ulcer. There is, however, usually an accompanying round-cell infiltration of the submucosa of a greater or less degree.

In considering the similar derangement of the gastric secretion in cases in which no carcinoma is present, I have obtained specimens from three stomachs exhibiting this phenomenon. The most noticeable findings are the occurrence in each of unquestionable non-contiguous erosions or ulcerations of the mucosa (Fig. 1), in places down to the muscularis, and a very evident submucosal infiltration of round cells (Fig. 2). Further, in many situations there was a marked engorgement of the capillaries, apparently due to the inflammatory reaction. Lying irregularly over the epithelium were masses of yellowish blood pigment, which are not found in normal stomachs, as was shown by many controls, and I feel justified in suggesting that they are probably due to a precipitation of the ferruginous element contained in the serum, which, it is evident from analogy, must exude from the eroded and inflamed areas.

The explanation of the entire *modus operandi* may be found in considering the following facts, which seem to have been fairly well established, and their correlation demonstrated:

First, a primary inhibition of the hydrochloric acid (reflexly produced); second, an invasion of the stomach by pathogenic organisms, especially streptococci, causing irritation of the mucosa; and third, a superficial ulcerated erosion of the mucosa.

Calling to mind evidence tending to prove the above, we have to consider:

First, inferentially:

1. Food causes pain, the acids being the worst.
2. Relief by vomiting, lavage and alkalies.
3. Restoration of hydrochloric acid after operation and treatment.
4. Disappearance of blood from test meal after treatment.
5. Complete disappearance of gastric symptoms after removal of irritant (appendix, gall-stones, etc.).
6. Various progressive and retrogressive phases as indicated previously.

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* Read before the American Gastro-Enterological Association, St. Louis, June 6, 1910.

* From the Pathologic Laboratories of St. Mary's Hospital, Rochester, Minn.

[1] Am. Jour. Med., 1909, cxxxviii, 846.

Second, objectively:

1. Absolute evidences of strong reflexes (pylorospasm).
2. Presence of micro-organisms (streptococcus, diplococcus, colon).
3. Absence of same in cases of normal acidity.
4. Normal gross appearance of these stomachs.
5. No thickening, cicatrices or atrophy when palpated.

Third, pathologically:

Macroscopic and microscopic demonstration of erosions of mucosa and round-cell infiltration of submucosa.

BACTERIOLOGY

In 350 specimens from 150 of these stomachs, stained at various intervals of time, the following organisms were found present with the indicated frequency:

Streptococci	127 cases	Diplococci (marked)	84 cases
Colon alone	8 cases	Lactic acid bacilli	42 cases
Streptococci and colon	64 cases		

Staphylococcus, proteus and leptothrix were always present. In several instances the cells of the mucosa itself had taken on phagocytic properties. Degenerated leukocytes were almost always present; in quantities large enough to be designated as pus in forty-eight cases. These findings have been amply controlled by repeated observations of the flora existing in cases of hyperacidity, normal, and hypo-acidity, and in malignant and non-malignant stenoses, with the result that the following conclusions seemed to be indicated:

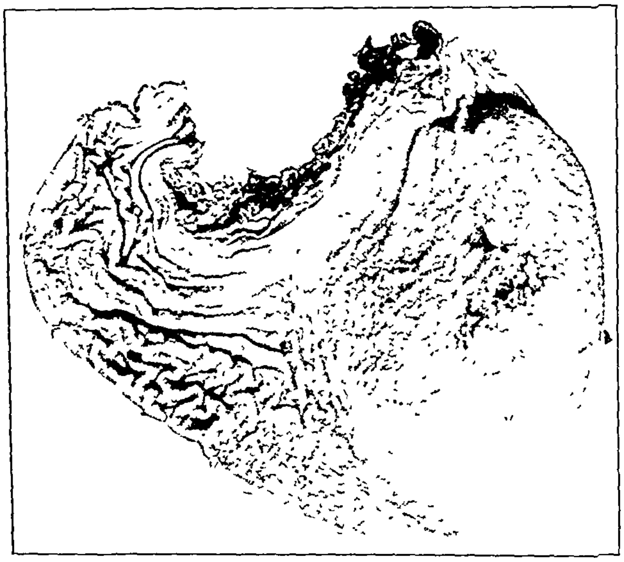

Fig. 1.—Gross appearance of posterior wall of stomach showing non-contiguous erosions or superficial ulcerations in fundus.

In the stomachs of patients presenting the symptom of achlorhydria hemorrhagica there is present a very large number of bacteria. Varieties ordinarily pathogenic are almost universally found, either alone or in combination.

Their presence is dependent on the lowered acidity of the gastric juice.

They are actively growing bacteria, evidenced by their profusion, morphologic characteristics and staining properties.

The streptococci are probably the most important factors, since they are found in larger numbers in those cases in which pus has been noted.

This would seem to be proof of some active irritation which would also account for the inferred presence of erosions of the mucosa.

The erosions of the mucosa are further indicated by the pain complained of.

The yellow color in the extracts and the blood reaction must both apparently be due to the oozing or seeping of serum from these erosions.

The sour, bitter, acrid eructations are the result of the formation of organic gases.

DIAGNOSIS

The determination of the presence of this symptom can, of course, only be made with accuracy by an analysis of the stomach contents, and this is quite characteristic either when considered grossly, chemically, or microscopically.

The amount recovered is usually less than that ingested. The bread is in a very coarse state of division, and practically as it has been swallowed. There is a uniform absence of viscosity, but the bread is quite frequently incorporated in thin mucus.

The color varies from a yellow tinge, just off the white, to a light orange. There is occasionally a slightly rancid odor.

The filtrate is invariably crystal clear and may have a slight yellowish tinge.

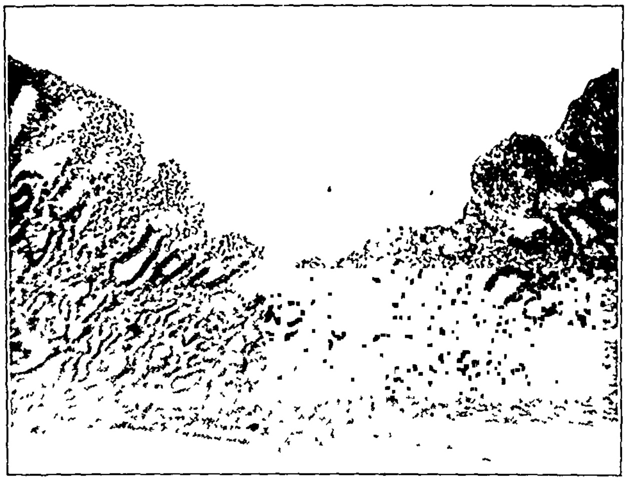

Fig 2.—From photomicrograph through defect in mucosa shown in Figure 1, showing destruction of epithelium and round-cell infiltration of submucosa.

The total acidity varies between 6 and 8 points, and is due to the acidity of the ingested bread. Free hydrochloric acid is never present. Combined acids are practically negative. Traces have, however, occasionally been found.

Lactic acid is present in about 15 per cent. of the cases, but the Strauss method must be used, as by Uffelman's method a perfect reaction is nearly always obtained, due to the lack of masking by hydrochloric acid.

The blood reaction is always present, the guaiac test in a modified form being employed. It is always of the so-called "occult" variety, and never traumatic. If it were, the extract would be red, and it would not be an admixture or diffuse. This reaction has been amply controlled in order to convince myself that the title proposed in this paper was justified.

Remnants are seldom found, and if obtained are due to continuous pylorospasm.

I have found the biuret reaction present in a much greater percentage than other observers have found it.

SYMPTOMATOLOGY

The symptom-complex in this class of cases presenting the symptom of achlorhydria hemorrhagica gastrica is rather difficult to define, chiefly because of the inconstancy of the accompanying symptoms, and yet it is on this very capriciousness that the chief point in diagnosis must be based.

The majority of these patients complain of oppression or distress in the epigastrium, amounting usually to a sensation of pain. In most cases it is of a burning or gnawing character, and occurred in one-third of the cases immediately after food. This does not always obtain, as they will say at times it occurs much later, or even before meals. The expression "at any time" is a familiar one, until the patients are required to state the inception more definitely. It is usually increased by taking food, although it may be relieved, temporarily. Various methods for its more permanent relief are to be noted, vomiting being the most prominent. Belching and sour, bitter, acrid eructations are a constant accompaniment.

In at least one-half of the cases vomiting is complained of, usually immediately after meals, consisting of the ingesta, which have a sour, bitter taste. Nausea is not infrequent, and hematemesis has occurred in several instances. Constipation is usual, but this may alternate with periods—usually of one to four weeks—of diarrhea, while in one class of cases the imperativeness of bowel movement immediately after eating is very suggestive of this derangement.

There is usually discrimination used by these patients as to the quality and quantity of food eaten, meats and fats being the first to be discarded. Very marked impairment of the appetite is present in many instances, although here also vagaries are to be noted. The loss of weight, averaging between 15 and 25 pounds, is an almost constant finding.

Generally patients with achlorhydria present a perverted mental attitude, and have periods of depression alternating with nervous excitement. All these factors I am inclined to think are rather the result of the condition due to the continued thought exercised by many of the so-called dyspeptics concerning their stomachs, or the fear induced by the idea of cancer being present, rather than a causative factor of the condition itself, which seems to be explicable on a much sounder pathologic basis than that of a neurosis. Malaise, easy fatigue, inability to work, occasional headaches, and insomnia, complete in a general way the symptomatology presented by the majority of the cases in this series.

Among the conditions which must be differentiated are gastric and duodenal ulcer, cancer and cardiospasm, also pregnancy, uremia, phthisis, urokinetic conditions, chronic obstructions of the colon, diseases of the nervous system, tabetic crises, hysterical vomiting, angina pectoris, abdominal angina and muco-membranous colitis. The relative value of each I hope to demonstrate in a subsequent article.

The coexistence of the etiologic factors (cholecystitis, appendicitis, pancreatitis, etc.) with their more or less obvious symptomatology, must be taken into consideration primarily.

TREATMENT

Treatment resolves itself into either medical or surgical. The latter is certainly indicated when any pathologic condition can be determined on. In view of our inability to diagnose any etiologic factor, the best results have been obtained from proper regulation of the diet and from the employment of the alkalies in combination with general tonics.

In the cases considered, 172 patients have been traced and their personal statement of their present condition tabulated. Sixty-one patients have entirely recovered, thirty-eight have merely an occasional complaint, twenty-three feel comparatively well, nine are moderately improved. In twenty-six there was no improvement, while four were worse, and eleven had died.

The greatest improvement has been obtained in those operated on. Of the eleven recorded as dead, we find the primary factor, as pancreatitis, nephritis, myocarditis, pernicious anemia, etc., given usually as the cause. One I know developed a cancer in the stomach, and two gave a history very suggestive of it, but it could not be confirmed.

SUMMARY

There is a definite entity presented in the stomachs of some patients suffering from various intra-abdominal and extra-abdominal pathologic conditions, which is characterized by the absence of hydrochloric acid and the presence of "occult" blood.

This condition is probably effected through the agency of a reflex nerve stimulation inhibiting first the production of free hydrochloric acid to only a moderate degree.

This so modifies the inhibiting factor of the gastric juice that the necessary conditions for the growth of pathogenic bacteria are furnished, chief among which are to be reckoned the streptococci and colon group, which are present in striking numbers.

These direct irritants, either themselves or in conjunction with a primary irritative factor, *e. g.*, gallstones, appendicitis, pancreatitis, etc., perpetuate the pathologic process until there is an achlorhydria produced. It is most probable that to the ulcerative erosion following this irritation the presence of blood may be ascribed.

In the 100 stomachs examined at operation atrophy was never present, nor was there, except in one case, any evident insufficiency of the pylorus.

There is a general symptomatology accompanying this condition which is very suggestive.

The test meal recovered is indicative of the pathologic process in the stomach.

There were indications in but seven cases observed that there was no secretion from the stomach mucosa. In others the presence of mucus, the biuret reaction and coagulation after activation would tend to show that there was still a moderate degree of enzymatic action. The cases are therefore not "achylia gastrica."

Proof of the etiologic factors has been deduced from the prompt and permanent recovery of the patients operated on.

The condition is so common, approximately one in every fifteen stomach cases in which the patients were examined, and the indication it gives of irritation in other organs I believe is so firmly established, not to mention the potential factor for future trouble which it itself contains, that it merits more frequent consideration in the study of possible gastric conditions.

I wish to take this occasion to express my appreciation of the kindness of Dr. W. J. Mayo in placing at my disposal this clinical and surgical material, which has made these investigations possible; and also my indebtedness to Dr. L. B. Wilson for many valuable suggestions in the course of this research.

145 Gates Avenue.

THE PLACE OF HEBOSTEOTOMY AS AN AID TO DELIVERY *

CHANNING W. BARRETT, M.D.

Professor of Gynecology Medical Department of the University of Illinois and Chicago Policlinic School; Gynecologist to Chicago Policlinic School and Hospital; Gynecologist to Henrotin Memorial Hospital; Obstetrician to Cook County Hospital

CHICAGO

Since pregnancy in woman usually consists in single fetation and since the child is born needing the care of the mother for years to come, that obstetric treatment *which does not strive to the utmost to result in a living* healthy mother and child ignores the fundamental purpose of pregnancy, namely, reproduction.

The obstetric art cannot afford to be wasteful of a single life. As long as there is a child mortality of 2 per cent., as reported by Hill, as well as a maternal mortality and morbidity and due directly or indirectly to disproportion between the size of the passage and the passenger, we are entirely justified in our efforts to secure for each mother and child that treatment best adapted to their needs.

APPLICATION AND LIMITATION OF HEBOSTEOTOMY

Hebosteotomy must be considered in the light of its success in certain conditions in which other measures fail and its limitations must be set only by the greater success of other procedures to terminate the pregnancy safely for mother and child, to which end the state and the individual has a right to expect that every means possible be brought to bear. Two important erroneous impressions obtain in this relation: first, that pregnancy and labor are physiologic processes and second, that when they cease to be so, the separation of the mother and child at all hazards to the child constitute successful obstetrics. When we consider the number of maternal and fetal deaths, the invalidism in mothers from tears, infections, hemorrhages, etc., and the crippled and mentally defective children that result, it will be seen that it were greater wisdom to consider them pathologic processes. This would send the obstetrician to his case better equipped mentally as well as materially. This would also do away with the midwife, one of the greatest inconsistences of modern medicine. As to the second point, it may not always be possible to save mother and child but failure to do so allows the pregnancy to fail of its purpose and this should not be until every measure at our command is exhausted. Good obstetrics means not only watchful expectancy for a spontaneous delivery but wise intervention looking toward the saving of the life and health of mother and child.

Not every practitioner has acquired such skill in pelvic measurements that he can determine the amount of contraction, flattening, narrowing of the pelvic arch, exostoses, size of the child's head, etc., to a nicety; neither can an expert estimate the proportions to a certainty, but such skill can be acquired as will foretell a probable difficult labor and too much emphasis cannot be laid on the importance of seeking hospital care and the services of one skilled in obstetric technic in order that the right step may be taken at the right time.

METHODS OF DELIVERY

The purpose of this paper is to review some of the methods in use in the presence of disproportion between the child's head and the pelvis of the mother and to deal in particular with one of these methods—hebosteotomy.

1. A marked degree of contraction has been considered a justifiable excuse for abortion in the early months of pregnancy, but if we do not presume to judge between human lives 100 per cent. fetal mortality is too high a price to pay.
2. Artificial labor is sometimes induced after the period of viability has been reached in moderate degrees of contraction.
3. Efforts have been made, and with reported success, to control the growth of the child during the latter months of pregnancy.
4. Labor is allowed to continue beyond the usual length of time in order that a disproportionally large head may mold.
5. The high forceps are applied and efforts made to drag the head into and through the pelvis.
6. Version is performed to force delivery of the mother at the expense of the child.

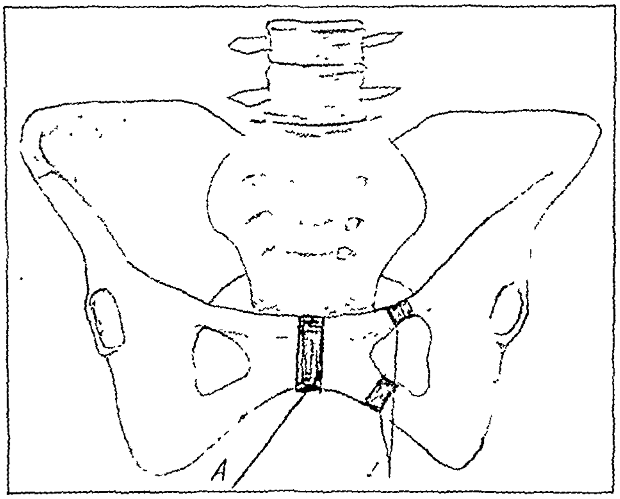

Fig 1.—Diagram of (A) Sigault's symphyseotomy (1777) and (B) Pinard's ischiopubiotomy (1892).

7. Craniotomy is performed even in the living child by some.
8. Cesarean section is chosen when a medium or marked degree of contraction is known to exist or when it is discovered while the child is still living, head not engaged, and the mother still in fair condition and uninfected. In some instances these objections might be set aside in favor of Cesarean section.
9. Enlargement of the pelvis to meet the disproportion is accomplished by separating the symphysis, or preferably cutting through the body of the pubic bone, the first known as symphyseotomy and the latter variously known as pubiotomy, hebotomy, etc., but preferably called hebosteotomy.

I would not wish to say that any one of these methods is without its field of usefulness in some hands, but I should have to have a stronger indication for abortion and craniotomy than that a patient did not wish to submit to a fairly safe obstetric operation. The periods of pregnancy and labor are no times for a woman to prove a "quitter." I should say that she has no right to ask the life of the child that she may avoid hebosteotomy or a comparatively safe Cesarean section.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

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THE PLACE OF HEBOSTEOTOMY AS AN AID TO DELIVERY *

CHANNING W. BARRETT, M.D.

Professor of Gynecology Medical Department of the University of Illinois and Chicago Policlinic School; Gynecologist to Chicago Policlinic School and Hospital; Gynecologist to Henrotin Memorial Hospital; Obstetrician to Cook County Hospital

CHICAGO

Since pregnancy in woman usually consists in single fetation and since the child is born needing the care of the mother for years to come, that obstetric treatment which does not strive to the utmost to result in a living healthy mother and child ignores the fundamental purpose of pregnancy, namely, reproduction.

The obstetric art cannot afford to be wasteful of a single life. As long as there is a child mortality of 2 per cent., as reported by Hill, as well as a maternal mortality and morbidity and due directly or indirectly to disproportion between the size of the passage and the passenger, we are entirely justified in our efforts to secure for each mother and child that treatment best adapted to their needs.

APPLICATION AND LIMITATION OF HEBOSTEOTOMY

Hebosteotomy must be considered in the light of its success in certain conditions in which other measures fail and its limitations must be set only by the greater success of other procedures to terminate the pregnancy safely for mother and child, to which end the state and the individual has a right to expect that every means possible be brought to bear. Two important erroneous impressions obtain in this relation: first, that pregnancy and labor are physiologic processes and second, that when they cease to be so, the separation of the mother and child at all hazards to the child constitute successful obstetrics. When we consider the number of maternal and fetal deaths, the invalidism in mothers from tears, infections, hemorrhages, etc., and the crippled and mentally defective children that result, it will be seen that it were greater wisdom to consider them pathologic processes. This would send the obstetrician to his case better equipped mentally as well as materially. This would also do away with the midwife, one of the greatest inconsistences of modern medicine. As to the second point, it may not always be possible to save mother and child but failure to do so allows the pregnancy to fail of its purpose and this should not be until every measure at our command is exhausted. Good obstetrics means not only watchful expectancy for a spontaneous delivery but wise intervention looking toward the saving of the life and health of mother and child.

Not every practitioner has acquired such skill in pelvic measurements that he can determine the amount of contraction, flattening, narrowing of the pelvic arch, exostoses, size of the child's head, etc., to a nicety; neither can an expert estimate the proportions to a certainty, but such skill can be acquired as will foretell a probable difficult labor and too much emphasis cannot be laid on the importance of seeking hospital care and the services of one skilled in obstetric technic in order that the right step may be taken at the right time.

METHODS OF DELIVERY

The purpose of this paper is to review some of the methods in use in the presence of disproportion between the child's head and the pelvis of the mother and to deal in particular with one of these methods—hebosteotomy.

1. A marked degree of contraction has been considered a justifiable excuse for abortion in the early months of pregnancy, but if we do not presume to judge between human lives 100 per cent. fetal mortality is too high a price to pay.
2. Artificial labor is sometimes induced after the period of viability has been reached in moderate degrees of contraction.
3. Efforts have been made, and with reported success, to control the growth of the child during the latter months of pregnancy.
4. Labor is allowed to continue beyond the usual length of time in order that a disproportionally large head may mold.
5. The high forceps are applied and efforts made to drag the head into and through the pelvis.
6. Version is performed to force delivery of the mother at the expense of the child.

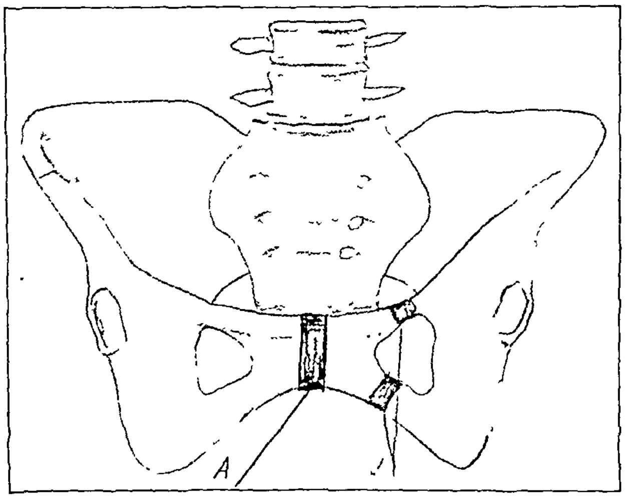

Fig 1.—Diagram of (A) Sigault's symphyseotomy (1777) and (B) Pinard's ischiopubiotomy (1892).

7. Craniotomy is performed even in the living child by some.
8. Cesarean section is chosen when a medium or marked degree of contraction is known to exist or when it is discovered while the child is still living, head not engaged, and the mother still in fair condition and uninfected. In some instances these objections might be set aside in favor of Cesarean section.
9. Enlargement of the pelvis to meet the disproportion is accomplished by separating the symphysis, or preferably cutting through the body of the pubic bone, the first known as symphyseotomy and the latter variously known as pubiotomy, hebotomy, etc., but preferably called hebosteotomy.

I would not wish to say that any one of these methods is without its field of usefulness in some hands, but I should have to have a stronger indication for abortion and craniotomy than that a patient did not wish to submit to a fairly safe obstetric operation. The periods of pregnancy and labor are no times for a woman to prove a "quitter." I should say that she has no right to ask the life of the child that she may avoid hebosteotomy or a comparatively safe Cesarean section.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

SYMPTOMATOLOGY

The symptom-complex in this class of cases presenting the symptom of achlorhydria hemorrhagica gastrica is rather difficult to define, chiefly because of the inconstancy of the accompanying symptoms, and yet it is on this very capriciousness that the chief point in diagnosis must be based.

The majority of these patients complain of oppression or distress in the epigastrium, amounting usually to a sensation of pain. In most cases it is of a burning or gnawing character, and occurred in one-third of the cases immediately after food. This does not always obtain, as they will say at times it occurs much later, or even before meals. The expression "at any time" is a familiar one, until the patients are required to state the inception more definitely. It is usually increased by taking food, although it may be relieved, temporarily. Various methods for its more permanent relief are to be noted, vomiting being the most prominent. Belching and sour, bitter, acrid eructations are a constant accompaniment.

In at least one-half of the cases vomiting is complained of, usually immediately after meals, consisting of the ingesta, which have a sour, bitter taste. Nausea is not infrequent, and hematemesis has occurred in several instances. Constipation is usual, but this may alternate with periods—usually of one to four weeks—of diarrhea, while in one class of cases the imperativeness of bowel movement immediately after eating is very suggestive of this derangement.

There is usually discrimination used by these patients as to the quality and quantity of food eaten, meats and fats being the first to be discarded. Very marked impairment of the appetite is present in many instances, although here also vagaries are to be noted. The loss of weight, averaging between 15 and 25 pounds, is an almost constant finding.

Generally patients with achlorhydria present a perverted mental attitude, and have periods of depression alternating with nervous excitement. All these factors I am inclined to think are rather the result of the condition due to the continued thought exercised by many of the so-called dyspeptics concerning their stomachs, or the fear induced by the idea of cancer being present, rather than a causative factor of the condition itself, which seems to be explicable on a much sounder pathologic basis than that of a neurosis. Malaise, easy fatigue, inability to work, occasional headaches, and insomnia, complete in a general way the symptomatology presented by the majority of the cases in this series.

Among the conditions which must be differentiated are gastric and duodenal ulcer, cancer and cardiospasm, also pregnancy, uremia, phthisis, urokinetic conditions, chronic obstructions of the colon, diseases of the nervous system, tabetic crises, hysterical vomiting, angina pectoris, abdominal angina and muco-membranous colitis. The relative value of each I hope to demonstrate in a subsequent article.

The coexistence of the etiologic factors (cholecystitis, appendicitis, pancreatitis, etc.) with their more or less obvious symptomatology, must be taken into consideration primarily.

TREATMENT

Treatment resolves itself into either medical or surgical. The latter is certainly indicated when any pathologic condition can be determined on. In view of our inability to diagnose any etiologic factor, the best results have been obtained from proper regulation of the diet and from the employment of the alkalies in combination with general tonics.

In the cases considered, 172 patients have been traced and their personal statement of their present condition tabulated. Sixty-one patients have entirely recovered, thirty-eight have merely an occasional complaint, twenty-three feel comparatively well, nine are moderately improved. In twenty-six there was no improvement, while four were worse, and eleven had died.

The greatest improvement has been obtained in those operated on. Of the eleven recorded as dead, we find the primary factor, as pancreatitis, nephritis, myocarditis, pernicious anemia, etc., given usually as the cause. One I know developed a cancer in the stomach, and two gave a history very suggestive of it, but it could not be confirmed.

SUMMARY

There is a definite entity presented in the stomachs of some patients suffering from various intra-abdominal and extra-abdominal pathologic conditions, which is characterized by the absence of hydrochloric acid and the presence of "occult" blood.

This condition is probably effected through the agency of a reflex nerve stimulation inhibiting first the production of free hydrochloric acid to only a moderate degree.

This so modifies the inhibiting factor of the gastric juice that the necessary conditions for the growth of pathogenic bacteria are furnished, chief among which are to be reckoned the streptococci and colon group, which are present in striking numbers.

These direct irritants, either themselves or in conjunction with a primary irritative factor, *e. g.*, gallstones, appendicitis, pancreatitis, etc., perpetuate the pathologic process until there is an achlorhydria produced. It is most probable that to the ulcerative erosion following this irritation the presence of blood may be ascribed.

In the 100 stomachs examined at operation atrophy was never present, nor was there, except in one case, any evident insufficiency of the pylorus.

There is a general symptomatology accompanying this condition which is very suggestive.

The test meal recovered is indicative of the pathologic process in the stomach.

There were indications in but seven cases observed that there was no secretion from the stomach mucosa. In others the presence of mucus, the biuret reaction and coagulation after activation would tend to show that there was still a moderate degree of enzymatic action. The cases are therefore not "achylia gastrica."

Proof of the etiologic factors has been deduced from the prompt and permanent recovery of the patients operated on.

The condition is so common, approximately one in every fifteen stomach cases in which the patients were examined, and the indication it gives of irritation in other organs I believe is so firmly established, not to mention the potential factor for future trouble which it itself contains, that it merits more frequent consideration in the study of possible gastric conditions.

I wish to take this occasion to express my appreciation of the kindness of Dr. W. J. Mayo in placing at my disposal this clinical and surgical material, which has made these investigations possible, and also my indebtedness to Dr. L. B. Wilson for many valuable suggestions in the course of this research.

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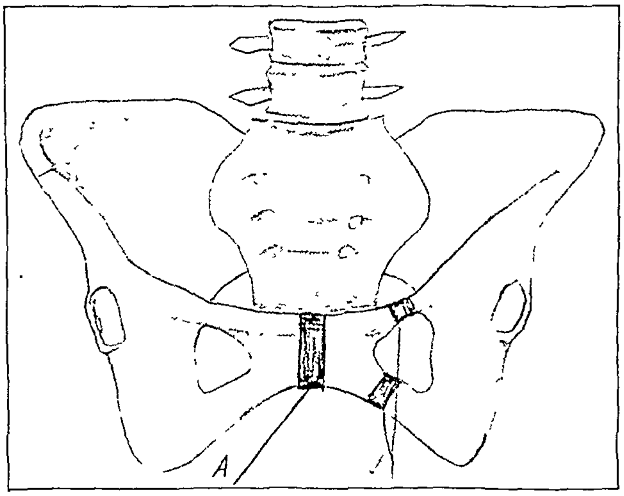

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Artificial premature labor is followed by a large fetal mortality and efforts at dwarfing the growth of the child may prove ineffective or harmful if effective.

Again our treatment in many cases begins only after labor has begun or long continued. The value of a long and forced labor in molding the head in cases of mild disproportion must be appreciated and yet the dangers of exhaustion of the mother and compression of the child's head must not be underestimated. The head floating above the pelvic brim after long-continued labor indicates a marked degree of disproportion in which version and high forceps are seldom, if ever, indicated, as they are murderous to the child. Cesarean section, with the improved surgical technic, holds a wide and increasing field of usefulness. That there have been errors none will deny. Much has been said about Cesarean section displacing hebosteotomy, they are not entirely competitive procedures they are complementary, each having a place of its own, yet with their fields overlapping.

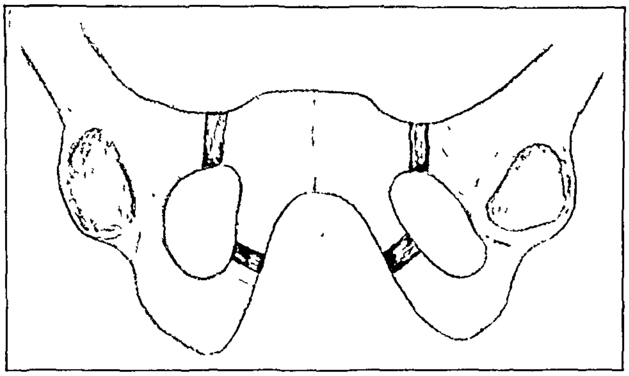

Fig 2.—Aitken's pelvitomy (1785).

Remove hebosteotomy, and craniotomy or its near cousins high forceps and version have to be substituted. Hebosteotomy is for the living child; craniotomy for the dead. A well-chosen Cesarean section promises life for the future child after the death of this one: hebosteotomy steps in to save this one. "Cesarean section gives a high percentage of recoveries." True, in selected cases; but done in those cases in which hebosteotomy could be successfully done the mortality would decidedly increase. Cesarean section permits of no well-determined efforts at labor in the border line cases with a safe means of escape if that effort fails. The statistics of Cesarean section and operations on the bony outlet cannot rightfully be compared as the former are done on fresh patients while the latter are frequently done on exhausted patients.

THE PLACE OF HEBOSTEOTOMY

I make no enthusiastic claim for the theoretic beauty of the operations of enlarging the bony pelvis, but if it saves life and in no great degree sacrifices health, it has a place, and if it has a place its successes will be greater as its indications are better understood and its technic improved. There is at present wide variations of opinion. The value and the place of the operation is not determined. Williams, who formerly spoke very discouragingly of symphyseotomy and in favor of Cesarean section, now reports his experiences based on 25 cases of hebosteotomy with marked success and this is entirely worthy of the consideration of the champions of Cesarean section who think that this should take the place of hebosteotomy.

RESULTS IN SIX CASES

My experience is based on six cases, the results of which have gone far to overcome my former prejudice against the advisability of attacking the bony pelvis. The six patients while operated on during varying *degrees of exhaustion have resulted in six living mothers* and six living children. Of these six cases four were seen after labor had continued for many hours. The patient in Case 4 had been in labor four and one-half days. The patient in Case 3 began labor under my care but was required to exert a strong test of labor because she had previously been delivered of a 9½ pound girl, with high forceps. She was urged to enter the hospital at the second delivery as it was found that the head was large and a moderate exostosis existed at the symphysis. The patient in Case 6 entered the hospital under my care and it was thought that delivery would take place. The test of labor and the use of forceps with moderate force disproved this. The patients in Cases 1, 2, 3, 5 and 6 had had forceps used previous to the operation of hebosteotomy. In Cases 2 and 3 and 6 the forceps were applied by myself and a very careful effort made to engage the head. In Case 5 the forceps had been applied several times before the patient entered the hospital, the head was arrested in transverse position. It was thought that delivery might be effected with the use of the forceps, but the child's heart-beats were so rapid and weak that it was not thought best to put the additional tax on it. Extreme efforts at resuscitation had to be used even after a very easy delivery by hebosteotomy. In this case the soft parts over each parietal eminence sloughed but with no evil after-results.

This, like many of the complications, must not be charged to the operation. In Case 4 the head could not be reached with any degree of safety for the application of the forceps. In three cases the hebosteotomy communicated, through more or less considerable tears, with the vagina. These were closed with drainage and in no way seem to complicate the healing of the bone. In no case were the tears more extensive than frequently happens without the operation, and Case 6, in which the patient had extensive vaginal tear due to necessarily wide separation, resulted not less favorably than those with less tear. In no case was there even annoying hemorrhage at time of operation or hematoma afterward.

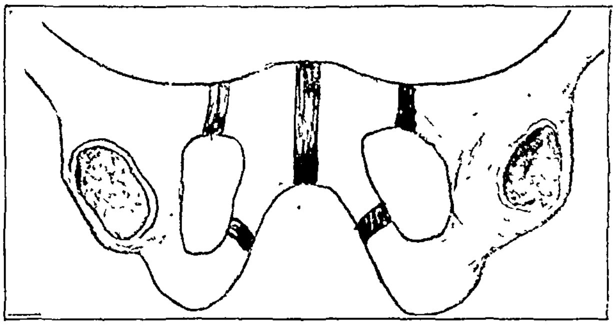

Fig. 3.—Galbiati's "pelviotomia," 1819-1832.

In Case 1 the operation was done in conjunction with Dr. Fitzpatrick by the open method. The Gigli saw was placed so far inward as to saw partly bone and partly cartillage. All others were done by the subcutaneous method and separated entirely through bone. The post-partum operation in Case 1 of bringing the bones and soft parts together consumed considerable time, while by the subcutaneous method all this was avoided.

The bony separation obtained we have estimated at from 3 to 6 cm. (about 1¼ to 2½ in.). Four of the patients have been recently inspected and in no case is there a waddling gait or difficulty in walikng due to the bony pelvis. The patient in Case 3 has some prolapse of the soft parts due to injury to the levator ani muscle; and the one in Case 4 has the cervix fixed by scar tissue but it is on the opposite side from that operated on and evidently in no way due to the operation.

COMPLICATIONS

Operators have recorded many evils and complications among which are injuries to the urethra, injuries to the head of the child, (laceration of the ear) traumatism of the iliac vessels, separation of the sacroiliac joint, severe hemorrhages (in some cases causing death) failure to obtain room for delivery even after this operation, non-union leading to disability, etc. These misfortunes have not befallen my patients thus far. It will also be seen that many of these are evils which may occur in case of severe labor without this or any other operation and many of them are plainly due to the injuries which have preceded the hebosteotomy or took place during delivery independent of the cutting of the bone. Direct injury to the bladder or to the head of the child have been due mostly to a sharp needle and this in itself must be looked on as faulty technic.

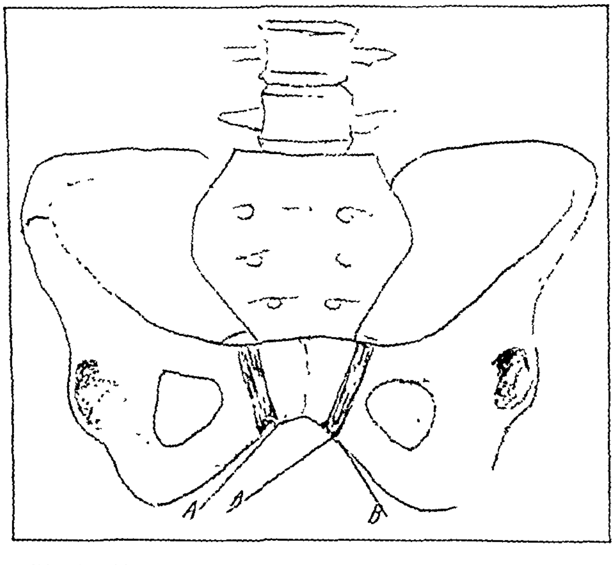

Fig. 4.—Diagram of (A, A') Pitois' bipubiotomy (1831), and (B) Champion's pubiotomy (1844).

In addition to the usefulness of hebosteotomy in immediate delivery it is interesting to determine the kind of healing that takes place as having some bearing on the future health of the mother and on future childbirth. In all cases examined the union has been firm, allowing no play of bone ends. In no case has there been a callous felt on the underside of the bone, but thickening has been felt on the upper surface persisting for some time. In four cases examined recently no thickening remains to suggest a previous operation. In one case a slight depression could be felt on the under side. There was, in all but one case, some fixation of the vaginal wall at the site of the operation. The skiagraphic picture has indicated a fibrous union in two cases but with separation of only ¼ and ⅜ inches, respectively. The skiagraphic results in the other cases were not satisfactory and future attempts will be made.

The above finding speaks well for the recovery of the patient but would seem to promise little so far as permanent enlargement is concerned. Williams reports the case of a patient dying after Cesarean section in a pregnancy following a hebosteotomy, in which a post-mortem study indicated a softening of the fibrous union that promised considerable enlargement. Some of his cases have shown enlargement and movability without apparent disability in locomotion. He reports, however, that such enlargement cannot always be expected as one patient had a second hebosteotomy with a child weighing even less. Seven of the pregnancies following the operation in his cases terminated as follows: 1 hebosteotomy, 2 Cesarean sections, 4 spontaneous deliveries.

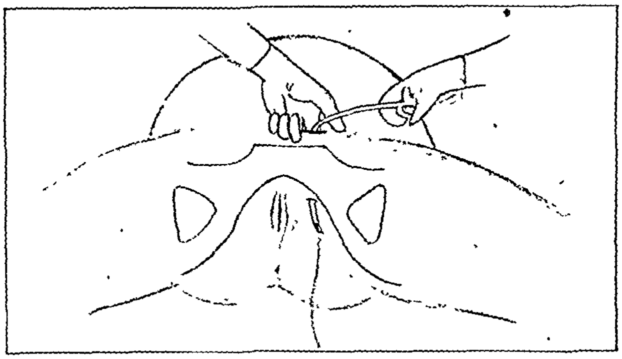

Fig. 5.—Döderlein's hebosteotomy, showing short transverse incision above the pubic bone for the introduction of the finger to guide the needle inserted from above downward.

It must not be taken for granted, however, that the cases of spontaneous deliverv were necessarily the result of permanent enlargement, for some of our patients had been previously delivered successfully. Neither must it be taken for granted that a patient having had a hebosteotomy is going to require operative delivery and a Cesarean section chosen, on that ground alone. Credé, Truzzi and Wendeler, Schikeles, Hammerschlag, Bell and others have advocated methods looking toward permanent enlargement, some even requiring extensive dissections.

When we consider that it is only in the slightly or moderately contracted pelves that hebosteotomy is applicable and in these cases the test of labor is needed to determine whether or not any enlargement will be required, and when it is so easy to get the desired enlargement at the time, if it is found necessary; and when we further consider that any permanent enlargement that would not cause a disability must necessarily be limited, while the required enlargement may vary 3 to 6 cm., such procedures must be viewed in the light of meddlesome surgery. I am convinced that our best results will be obtained by endeavoring to get the required enlargement for the present delivery with the best approximation and healing possible, leaving future deliveries to be determined by the merits of the case, spontaneous delivery if possible, forceps if required, hebosteotomy if necessary, Cesarean section if the degree of contraction is so great that delivery was very difficult with the previous hebosteotomy. To the extent that we get permanent enlargement, in that proportion shall we have disability in locomotion or pelvic hernias.

INDICATIONS

Lewis, in a summary of the literature, says: "I think the indications for both symphysiotomy and pubiotomy will become narrower and narrower as time goes on. In individual cases the decision will be between Cesarean section and perforation rather than between symphysiotomy and pubiotomy."

DeLee condemns hebosteotomy, but both these authorities speak without personal experiences with the operation, preferring Cesarean section. In many cases the opportune time for Cesarean section is past long before the life of the child is extinct—these authors would have to resort to craniotomy or, in these cases, a death-dealing high forceps or version. I think it may be said that the operation is indicated whenever it promises greater assurances of life to the mother and child than any other measure obtainable under given conditions. It can not compete with Cesarean section in marked degrees of contraction seen early. It has no reason to compete with craniotomy in the dead child. Neither can Cesarean section compete with hebosteotomy in patients who are seen advanced in labor and in whom numerous examinations and forceps applications have been made, making infection possible or, when the mother is exhausted. Yet in many of these cases craniotomy has no place, and version and high forceps are scarcely better.

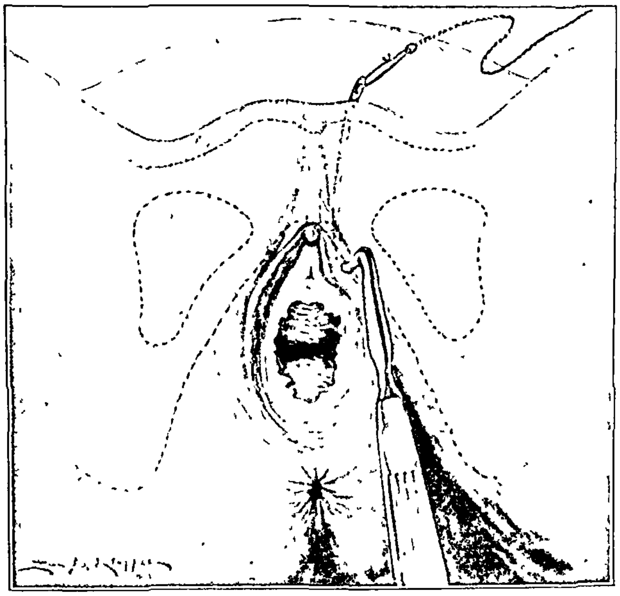

Fig. 6.—Hebosteotomy, showing the author's needle in place, entering just under the body of the pubic bone and emerging just above the bone and inside the pubic spine. The silk carrying the saw is then double threaded or tied in the eye of the needle.

It must be said that under these conditions hebosteotomy is not at its best but is not precluded, and may be said to have a wide field. Its most ideal field is in those cases in which a moderate degree of contraction foretells a difficult labor but in which there is promise enough of delivery that a good strong test of labor is desired. Here the patient should be placed under the best of surroundings and progress awaited. Should the mother or child show exhaustion, speedy delivery may be obtained at any time. I have not chosen the prophylactic hebosteotomy, for experience has shown that had I been so inclined I would have performed the operation on patients who were delivered spontaneously, or with forceps. On the other hand I recall a number of cases in former experience in which I should now employ hebosteotomy. Some place the aseptic restrictions on hebosteotomy almost or quite as strong as on Cesarean section. While it is true that sepsis complicates any operative procedures and that complications will increase thereby, yet the mere possibility of sepsis is no contraindication to the operation, and it must be remembered that the infected woman is not safe with or without operation, and instances may arise in which the saving of the child will more than offset any slightly increased risk to the mother incident to such operative procedure.

HISTORY

Hippocrates recognized the disproportion between the child's head and the pelvic outlet and its tendency to cause malposition. His writings also express the belief that delivery is effected by a separation of the pubic bones and that this should be permanent making future childbirth easy. Only the dangers of surgery would prevent this conception from being utilized in enlargement of the pelvis during difficult labors. Hebosteotomy can only be said to secure the advantages of symphyseotomy minus some of its disadvantages, and therefore the history of the two is closely associated.

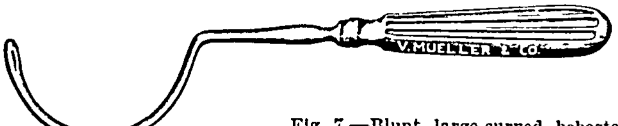

Fig. 7.—Blunt, large-curved, hebosteotomy needle, two-fifths size.

Sigault first demonstrated the possibility of pelvic enlargement by means of separation of the symphysis in 1768 but he lacked opportunity to demonstrate it on the living until 1777 when he and LeRoy operated on Mme. Suchot, who had had four difficult confinements with no living child. This resulted in a living child. Antonio Delgado in 1781 published an account of an operation of separating the symphysis with a knife subcutaneously, great enthusiasm was shown for symphyseotomy but it met in Baudelocque a caustic opponent. Misjudgment and lack of skill led to its falling into disrepute for nearly a century, when it was revived in 1866 by Morisani, who in 1881 reported 50 operations with 40 recoveries. Spinelli and Pinard are credited with its introduction into France.

R. H. Harris called attention to its use in this country, but Jewett was the first to perform the operation on this side of the Atlantic. Numerous methods of enlarging the pelvis were proposed in the century following Sigault's work. Pitois in 1831 proposed "bipubiotomy," severing both pubic bones. Champion proposed restricting this to one side in 1844. Aitkin in 1785, proposed "pelvitomy," cutting into the obturator foramen on each side severing all rami of the pubic bone. Galbiati's "pelviotomia" in 1819 to 1830 extended this to include the separation of the symphysis, but evidences are lacking that these operations were performed except on animals. Gigli in 1894, after a study of the disadvantages of symphysiotomy, proposed the cutting of the pelvic bone through an incision; this was but carrying out the idea of Champion fifty years previously. Bonardo of Lugano was the first to perform the operation in 1897. Calderini, Van de Velde and Gigli soon followed. Doederlein in 1904 substituted a small incision through which the tip of the finger could be inserted, to guide the needle posterior to the pubic bone. Walcher and Bumm punctured the skin and carried the needle through without the introduction of the finger. Montgomery of Quincy, Ill., was the first to do pubiotomy in this country, and recommends the Gigli incision, claiming to see no advantage in the subcutaneous operation. My observation would lead me to a far different conclusion.

CHOICE OF METHOD AND TECHNIC

As a means of enlarging the pelvis, hebosteotomy must be compared with symphysiotomy, the older operation. Each procedure has its supporters but there is a growing consensus of opinion that hebosteotomy secures all the advantages of the other operation minus some of its objections. Comparisons of statistics are drawn from a period when operative technic was less perfect, and again the statistics of symphyseotomy are largely with the open operation while hebosteotomy statistics show improvement because of the use of the subcutaneous, or partially subcutaneous, method. It may be said that hebosteotomy requires special instruments which may not be at hand; it is urged, however, that hebosteotomy runs less risk of injuring the crus, the urethra and the bladder, and, being through bone, secures better union. While not favoring symphyseotomy I am free to admit that its record might be decidedly improved if the subcutaneous method were adopted.

If hebosteotomy is chosen we then have for consideration the open method of Gigli, the partially open method of Doederlein and the subcutaneous method of Walcher and Bumm. My very limited experience of one case with the open method, and five cases with subcutaneous method leads me greatly to prefer the latter. There is no comparison in ease of performance and simplicity of after care. Montgomery, Williams, myself and others have chosen the open method for the first operation. Montgomery without further experience says he sees no advantage in the subcutaneous method. In Williams' subsequent cases the patients were operated on by the partially subcutaneous method of Doederlein and he much prefers it to the open methods. He has not tried the entirely subcutaneous method and thinks that his success in avoiding the bladder is due to the use of the partially open method. He, however, ascribes some of the infections to the open method and thinks it possible to avoid this by having a clean assistant close the wound.

There seems to me great advantage in the subcutaneous method providing a safe means of avoiding the bladder can be obtained. In the subcutaneous methods of Walcher and Bumm a sharp needle is employed that punctures the skin. The needle which I have had constructed has a large curve which gives plenty of room to sweep around the pubic bone, even though massive—as many of them are—and still allow for abundance of adipose tissue. The needle not only offers safety to the bladder directly by reason of its bluntness but, being blunt, it can be made to grate against the bone without catching unduly and thereby avoiding contact with the bladder. If this precaution is observed the point of the dull needle is under control at all times. It will be seen that the sharp needle cannot scrape the bone and therefore may injure the bladder. The needle enters through a slight knife stab at the fissure between the labium majus and minus at the lower border of the body of the pubic bone, is made to scrape the posterior surface of this bone to its upper border, when the handle is depressed and the point made to elevate the skin above the upper border of the bone where it is brought out a slight knife puncture. During the journey of the needle, its direction is controlled by one or two fingers in the vagina. When the needle is in place it is threaded with heavy silk thread, which carries the Gigli saw, after which it is made to retrace its steps, leaving the saw in place to sever the bone. The time of performing the operation is a matter of some discussion. Some Continental writers prefer to perform the operation early in labor after which the labor is allowed to progress normally. Four of my cases were seen after the patients had been long in labor and in the other two I needed the strongest test of labor and the moderate test of the forceps to prove the necessity of the operation, so that in all cases immediate delivery was desirable or imperative, which has been accomplished in each case with forceps. Possibly podalic version might be employed to advantage in some cases looking to a better adaptation of the head, as posterior positions are common. Forward rotation has been possible in all cases.

With Williams, I have found it a great advantage to massage and stretch the vagina and pelvic floor previous to the introduction of the saw, but this is scarcely less desirable in forceps delivery and so cannot be counted as belonging to the hebosteotomy. The technic, in addition to the forceps delivery, is the introduction of the needle and the sawing of the bone with perhaps the sewing of an unusually placed tear. Some have recommended the laying of the saw preliminary to the application of the trial of the forceps but this would mean an unnecessary laying of the saw in some cases. It appears more desirable to make the required test with the forceps, failing in which, the forceps may be removed and the hebosteotomy performed after which the forceps may be reapplied. On the other hand, I do see great advantage in the preliminary preparation of the saw if a breech delivery or podalic version is to be attempted in cases of disproportion, as when once begun, time would not allow the introduction of the needle even if necessary to delivery, while if the introduction had taken place the bone could quickly be severed. I would here recommend the introduction of the silk carrying the saw, leaving the saw above, as this would avoid the hard rough saw between the head and the pubic bone. If delivery failed, the saw could be quickly drawn through.

The after care has been very simple in the patients operated on subcutaneously. A sand-bag has been placed on each side of the patient and a broad adhesive strap placed across the pelvis in front. In cases in which a vaginal tear occurred this was closed and a strip of gauze carried up to the bone for a few days.

MORTALITY AND MORBIDITY

Hebosteotomy is an operation of importance undertaken at times when the mother or child has undergone considerable strain and sometimes abuse. It is inevitable that it will have a mortality and morbidity but these are often the results of prolonged labor not due to the operation but due to the operation being delayed. It is an operation of weight whose dangers are hemorrhages, infection, injuries to the soft parts, etc., all the details of which cannot be discussed. It will have its greatest percentage of success in the hands of men not only trained in surgery but trained in obstetric surgery of this particular kind. It will have its greatest numerical success, although some failures, when taken to the lying-in room by all who are willing to be taught the technic and to provide the necessary saw and needle. It is not technically as difficult as repairing a lacerated pelvic floor, but that is not saying that it has no difficulties. I am inclined to think that Reed puts the matter too lightly, yet any procedure that will advance the obstetric art greatly must be capable of application by the many. Schlafli and others are overconservative. It is our purpose and privilege to say what is to be done with a woman advanced in labor with a living child in the presence of disproportion; it is the individual worker's problem to answer the question as to his ability to carry this out in his environment.

In conclusion I would say:

1. Pregnancy fails of its fundamental purpose when it does not terminate with a living child and living mother.
2. The child has rights that the mother's wishes and convenience have no right to ignore.
3. Patients should be examined for disproportion previous to the time of delivery and if this condition is present the child and mother should be safeguarded by being placed under the best possible conditions.
4. Hebosteotomy gives a separation of 3 to 6 cm. and facilitates delivery in cases of moderate disproportion to such an extent that the mortality and morbidity to the child and mother is only slightly greater than that incident to the injuries already sustained.
5. Hebosteotomy has a field in place of craniotomy in the living child showing an improved fetal mortality of nearly 100 per cent. with slight, if any, increased mortality to the mothers.
6. It should not be elected in place of Cesarean section in patients with a true conjugate of less than 7 cm.
7. It has a wide field of usefulness in those borderline cases of patients who fail to deliver after a strong labor test.
8. A head floating above the pelvic brim after a sharp second stage indicates such a degree of disproportion as to make version and high forceps dangerous.
9. Hebosteotomy has a field in the above condition after a moderate trial with the forceps or in cases in which they cannot be conveniently and securely applied.
10. When hebosteotomy is employed after labor has long continued, the patient should be delivered immediately with high forceps or version.
11. Version should not be employed in cases with marked disproportion without a preliminary laying of the silk which is to carry the saw.
12. The simple instruments necessary to this means of saving human life should be a part of the obstetric outfit.

100 State Street.

ABSTRACT OF DISCUSSION

Dr. Ernest G. Zinke, Cincinnati: When advocating hebosteotomy, two years ago, before the American Association of Obstetricians and Gynecologists, I found but little sympathy, and this operation was roundly denounced at a meeting of the American Gynecological Society two years ago. With the exception of Montgomery of Quincy, Ill., Williams of Baltimore was the only one, at that time, who had performed the operation repeatedly, notwithstanding the opposition expressed. The new therapy of narrow pelvis simply implies this. We must carefully study pregnancy cases before parturition sets in. If we discover contracted pelves, these patients should be conveyed if possible, to a lying-in hospital. When the pelvic contraction is moderate, the "test of labor" is indicated. If the passage proves too small for the passenger, the case is one either for hebosteotomy or Cesarean section. If the contraction of the anteroposterior diameter of the inlet is not below 8 or 7.5 cm., hebosteotomy is indicated, if the contraction amounts to 7 cm. or less, the case is one for Cesarean section. The new therapy of narrow pelvis has achieved wonderful results abroad, principally in Germany, Italy and France. There are on record several thousand cases of narrow pelvis in which this new treatment secured a maternal mortality of only 0.1 per cent., and a fatal mortality of between 4 and 5 per cent. What better results can we expect? Briefly stated, the new therapy of narrow pelvis at present consists of the test of labor, hebosteotomy and Cesarean section. Eighty per cent. of the women subjected to this treatment delivered themselves spontaneously without harm to themselves or their offspring, 15 per cent. were delivered by the aid of hebosteotomy, and only 5 per cent. required Cesarean section. Equally good results have never been obtained by other means in the history of obstetrics.

Dr. Collin Foulkrod, Philadelphia: I think it is unwise to let this paper pass without saying a word from the standpoint of those few men who, Dr. Barrett says, still hold to some other views not supporting hebosteotomy. In the institution with which I am connected, we have not done it, because we have been able to save the patients without doing hebosteotomy, and because we have been led by the experience of other men to conclude that perhaps hebosteotomy does not fill the place it is said to fill. I think that men going out into the country should know something of the objections to it. In the first place some of these patients should be subjected to the test of labor, but this consists in proving without forceps whether it is possible for the head to engage in the pelvis. If it can, there is no question of doubt that we can bring the head out with forceps. In the class of cases in which the head cannot engage, we do not manipulate enough to have them called infected cases and in these Cesarean section is done with good results, there being less than 1 per cent. of deaths to the mother, with 100 per cent. of living children. These cases are not in our own practice, because in our own patients we determine by measurement made before labor whether Cesarean section will be needed, but there come to us in hospital work certain cases that have been handled, and they are dealt with according to the indications, we have saved as great a percentage with Porro Cesarean section as with hebosteotomy. There are still a few men in the large cities who hold to the view that patients can be delivered by Cesarean section after a fair test of labor. Those who go out into practice should study cases to know whether to induce labor rather than do hebosteotomy. Hemorrhage is present in some cases, and unless great precaution is taken there will be failure to control it. In the second place, there will be greater lacerations by hebosteotomy than by Cesarean section in good hands. Hebosteotomy has a place in obstetrics, but the cases in which it is applicable are very few.

Dr. H. D. Fry, Washington: I expect that I am to blame for the objections that were made to this operation which Dr. Zinke refers to in connection with the American Gynecological Society three years ago. I read a paper at that time reporting some cases, and also the histories of patients who had been operated on in this country. The great objections to hebosteotomy as shown by that paper were, that there were a number of cases of lacerations from the incision into the vagina and injuries to the bladder. There were cases of hematoma, of septic inflammation and of phlebitis and in one of the cases that I reported, the patient died on the tenth or eleventh day from embolism due to septic phlebitis. These lacerations of the vagina and injuries to the bladder are not due to the use of the needle or knife, but to the tearing of the tissues when the head, on extraction, causes separation of the bones that have been sawn apart. Another great objection to hebosteotomy and symphysiotomy is that convalescence is so unsatisfactory. The patients suffer a great deal of pain, it is difficult to draw the urine and the nurses dislike the care of these patients. I have tried repeatedly to have a special bed used, having a hole cut at the point where the buttocks will come, so that the douches may be given readily. I dread to do the operation, simply because of the unsatisfactory convalescence. I believe, however, that there is a place for symphysiotomy or pubiotomy, but I would never make the operation an elective one, as has Williams, who has done it in 25 cases, nearly every one elective, in which I should have performed Cesarean section. The patients I would treat by this operation are just the ones Dr. Barrett has mentioned. If I were called to see a woman who had been in labor for some hours, examined repeatedly, and on whom the forceps had been tried, Cesarean section should not be done. In such cases we must resort to hebosteotomy or craniotomy, version or high forceps. Craniotomy I do not believe is justifiable on the living child. High forceps operation in maternity hospitals has a death rate among children of 33 per cent. Version with contracted pelves has about the same fatality, so in those border line cases, in which we have had labor coming on, or those in which we have allowed labor to come on as a test, if the head is still not engaged and the case has the appearance of a difficult high forceps one, the time for doing a hebosteotomy has arrived.

Dr. T. Mitchell Burns, Denver: I wish to speak for symphysiotomy, not saying that hebosteotomy is not just as good. I believe to the average obstetrician symphysiotomy is a simpler operation, requires no special instruments, and gives just as good, if not better, results. I have performed this operation four times on parturient women, have operated once on the cadaver and another time on the dog. I believe preliminary operations should be done on the cadaver and the dog before one operates on the human being. In the cadaver I did not cut completely through the sub-pubic ligament, and as a result I had laceration of the clitoris. I believe that symphysiotomy or hebosteotomy may be well performed in the private house. This makes it a much better operation to consider in a great many cases in the country. All that is necessary to hold the hips together afterward is an ordinary many-tailed bandage. All the complicated apparatus is absolutely unnecessary. The patient's posture may be lateral or dorsal, or with the legs extended or flexed. She may get up at the end of two weeks or ten days even.

Dr. Channing W. Barrett, Chicago: The champions of Cesarean section did not come out so strongly as I thought they might. There was much in the paper that I would like to have brought before the Section, which I did not have time to read, and some of these points have been mentioned. One point is, that in enlarging the pelvis we have different procedures to fall back on, one of which is symphysiotomy and the other pubiotomy. The advantages of the pubiotomy are perhaps less risk of injury to the urethra, and bone union instead of cartilage union. One of the advantages of symphysiotomy, as Dr. Burns stated, is that it may be done without the instruments necessary for hebosteotomy in an emergency, and the disadvantages of symphysiotomy as taught in literature are not so great as the statistics would indicate, because the statistics of symphysiotomy are drawn from an older period than those of pubiotomy—a time when the technic was less accurate, and the statistics compare open symphysiotomy with subcutaneous hebosteotomy. If we could compare the statistics of subcutaneous symphysiotomy with subcutaneous hebosteotomy we might find that the statistics would be almost as good as they are in hebosteotomy. Some authors insist that the open method of one should not be compared with the subcutaneous method of the other. Subcutaneous hebosteotomy has much the advantage over the open method in the immediate time of doing the operation, the element of danger to the patient, after-care, etc. Dr. Fry spoke of the precaution of having the patient supported from the side. I find that entirely unnecessary. When we cut through the bone we get just a little separation, because we have all the soft parts there to hold the pelvis. If an open operation were being performed we might need to observe this precaution. In the subcutaneous operation it is only when we draw the head through the pelvis that we get such separation as is required.

The point was made in regard to Cesarean section that the cases were chosen—that the physicians determined beforehand by measurement whether the head was going to come through the pelvis or not. They must have a very fine technic. There are some cases in which measurement would easily determine that a Cesarean section would be necessary, but that is not the average case. More frequently it is the border line cases we meet in which a strong labor test is required to determine this. I have had opportunity to observe cases in which measurement determined that a Cesarean section would be necessary, but labor easily proved the contrary by spontaneous delivery. A slight test of labor is no test at all, it takes a very hard test to tell whether the woman is going to deliver herself spontaneously or with forceps, after which a Cesarean section may not be advisable. We see also cases in which the patients have been in labor under the hands of some one else, and they have passed the time when safe Cesarean section could be done. In hebosteotomy we have an operation that an average man can do.

Williams says, that in cases in which he is going to put on forceps or perform version, he would put the saw in position so that if version or forceps failed he could sever the bone. This is unnecessary in case the forceps are to be applied, because if the forceps fail we can take them off and then introduce the needle and saw. In version this precaution is important, but I would urge the advisability of introducing the silk that is to carry the saw rather than the saw itself, as we will not then have the rough saw between the fetal parts and pelvic bone, while if efforts at delivery fail the saw can readily be drawn through. My experience has not demonstrated that the patient has marked pain after this operation, nor that the after-care is formidable, as has been mentioned by Dr. Fry.

INFLUENCE OF PERIGASTRIC LESIONS ON GASTRIC SECRETIONS

STUDY BASED ON CLINICAL AND EXPERIMENTAL OBSERVATIONS

M. J. LICHTY, M.D.
CLEVELAND

A few years ago I was impressed with the extraordinary frequency with which I met patients who had gastric hyperacidity with their gastric symptoms. Many of them were of a neurotic type and could possibly have been diagnosed and dismissed as cases of nervous dyspepsia with hyperacidity. But a great many others, eventually and often surprisingly, gave positive symptoms and physical signs pointing to disease of other organs near the stomach, which, no doubt, influenced the gastric secretions and made the diagnosis of nervous dyspepsia unwarranted. In a discussion of this matter with my brother, Dr. J. A. Lichty, of Pittsburg, I found that he had the same experience. On account of the belief that the very frequent diagnosis of dyspepsia with hyperacidity was often unwarranted, we decided to investigate the subject more minutely, both from clinical observations and by experiments on animals.

SUMMARY OF CLINICAL OBSERVATIONS

In a review of the cases of 600 patients who consulted me in private practice, who complained of symptoms referring to the stomach, and on whom gastric analyses were made, 318, or more than 50 per cent., had a gastric juice which was hyperacid. The number of cases with normal acidity, subacidity and achylia gastrica was less than those of gastric hyperacidity. This excessive acidity could be accounted for in several ways. Some were cases of simple nervous dyspepsia with hyperacidity. Many could safely be diagnosed as catarrh of the stomach with hyperacidity. A considerable number of patients had ulcer of the stomach. But others had a hyperacidity which, from what the clinical and experimental work now indicate, was secondary to lesions of the digestive tract in organs surrounding the stomach.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

I regret that my own tabulated report of very positive diagnoses of appendicitis and gall-bladder disease is so limited. It may be worthy of mention, however, that, in 54 per cent. of the fifty-six cases of acute and chronic appendicitis seen the last few years in private practice, examinations, including gastric analyses, were made. And, of the cases in which these gastric analyses were made, 83 per cent. showed a hyperacidity. In nearly all of the cases diagnosed as appendicitis the advice for operation was warranted, but only 65 per cent. of these cases were treated surgically, three-fourths of which had gastric analyses which showed a hyperacidity in 75 per cent. of the analyses. It appears, therefore, that of the patients operated on, as well as in those not operated on, more than 75 per cent. had a gastric hyperacidity.

In a still more limited number of gall-bladder cases (forty in all), 75 per cent. showed a gastric hyperacidity and, of those gall-bladder cases in which the diagnosis was verified by operations, more than 50 per cent. had a gastric hyperacidity. Those gall-bladder cases studied at operation which showed up hyperacidity were peculiarly interesting, inasmuch as they quite universally showed a gastric secretion with the very opposite extreme, a marked hypo-acidity. This hypo-acidity was usually present when the patient's physical condition had been greatly reduced by prolonged illness, or by extensive adhesions which bound together both stomach and gall-bladder, interfering directly with the motor power of the stomach. Two of the operative gall-bladder cases with subacidity had most striking gastric symptoms. The gastric analysis showed a marked deficiency of acids, the presence of lactic acid, as well as occult blood in several repeated analyses, making one very suspicious of gastric carcinoma. But the operations in these two cases showed nothing but gall-stones, and a perfectly healthy stomach except for adhesions to it. Another gall-stone case, with hypo-acidity and a secondary anemia, so marked that the diagnosis of some form of serious primary anemia was considered, had most dense adhesions between the gall-bladder and stomach, as well as an old perforation of the gall-bladder, which allowed the escape of several small stones into the peritoneal cavity. These stones, however, had been held adjacent to the gall-bladder by the firm adhesions.

Reference must here be made to the very striking similarity of figures and percentages in a study of a greater number of cases taken from the records of Dr. J. A. Lichty. Gastric analyses performed in 111 out of 258 of his cases of appendicitis showed a hyperacidity in 64 per cent. of the analyses. Of his 127 patients subjected to operation only forty-nine had had a gastric analysis, but in 69 per cent. of the cases a gastric hyperacidity was present, showing, therefore, a hyperacidity in two-thirds of all appendicitis patients so examined, whether operated on or not operated on. In 157 of 250 gall-bladder cases, which he tabulated, gastric analyses showed a hyperacidity in 54 per cent. of analyses; and, in those gall-bladder cases treated surgically in which gastric analysis had been made, 53 per cent. had an excess of gastric acidity.

Similar study of the gastric juice has been made recently by others:

Graham,[1] in his work with the Mayos, has very recently referred to the gastric symptoms arising from surgical conditions of other abdominal organs, though it was not his experience to notice this frequency of gastric hyperacidity.

Paterson,[2] of London, only a few months ago, expressed his surprise at the frequency of gastric symptoms and the change in gastric secretions caused by appendicitis. In his opinion, the many symptoms of gastric ulcer and even gastric hemorrhage were found at times, by study as well as at operation, to be the sequel of appendicitis. In a few of his cases there was a normal acidity, in about 30 per cent. a hypo-acidity, and in the remaining a marked hyperchlorhydria. He says that "a combination of marked symptoms of gastric ulcer with a negative gastric analysis is suggestive of chronic appendicular disease," and that "in recent years it is becoming gradually recognized that hematemesis, accompanied by pain and vomiting, is not pathognomonic of gastric ulcer." His statement that a gastro-enterostomy will not remove a diseased appendix is strikingly significant. While my experience is not exactly parallel with that of Paterson, since mine shows appendicitis frequently with a positive change in gastric secretion instead of a negative gastric analysis, as he states, yet I am very happy to refer to his comment of associated symptoms.

Here I wish to refer to a patient of my own who, three years ago, had a gastro-enterostomy for a gastric ulcer, which was nearly perforated and was excised at operation. Another ulcer was found to be present at the same time. The operation was done hurriedly. The patient made only a fair recovery and required an entero-enterostomy a year later to correct a vicious circle. Previous to the first, and following the second operation, the patient's gastric secretions were high, but within the last year she again developed vomiting and there was occasional blood in the vomitus. The tenderness over the appendix, which had been noticed the last few years, became more marked and the appendix was removed from dense adhesions only a few months ago. At present the patient seems to be making a good recovery.

W. S. Fenwick[3] calls attention to a mild type of hypersecretion, the result of latent disease of the appendix. He says:

> As a rule, it displays an intermittent character for several years and each fresh addition is ascribed by the patient to a chill, mental anxiety, or some indiscretion of diet. Considerable time after it has attained the chronic stage, the typical symptoms of a moderate hypersecretion continue to manifest themselves, but, with the progress of time, paroxysmal pain is gradually replaced by discomfort and distention, which persists during the day, the symptoms varying to a great extent according to the appendicular lesion and the concomitant state of the gastric secretion.

Moynihan[4] states, that, in his view, "the typical gastric ulcer in the medical text-book is frequently the appendix." In his study, recently published, he considered the pathology and symptoms of the associated lesions of the appendix and stomach without giving much attention to the gastric secretions. I myself believe that the typical chronic dyspepsia (of the medical text-book) with change of gastric secretions is frequently the appendix or the gall-bladder.

EXPERIMENTAL OBSERVATIONS

A summary of earlier clinical observations, as well as those of others more recently made, has fully justified an investigation of this subject from an experimental basis. Experiments on a number of dogs were begun two years ago and have been continued constantly since, with some very satisfactory and surprising results. The method of experimentation, briefly described, was as follows:

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[1] Graham, C., and Guthrie, D.: The Dyspeptic Type of Chronic Appendicitis, The Journal A. M. A., March 19, 1910, p. 960.

[2] Paterson: Appendicular Gastralgia in Appendicitis as a Cause of Gastric Sypmtoms, Lancet, London March 12, 1910.

[3] Fenwick, W. S.: Lancet, London, March 12, 1910.

[4] Moynihan: Brit. Med. Jour., Jan. 29, 1910.

A number of healthy dogs were secured and a study was made of their gastric secretions. At definite intervals of two or three days the dogs were not fed until noon; then a meal of about 8 ounces of water, containing bread sufficient in quantity to make a gruel, was inserted into the stomach with a bulb and a stomach-tube. Thirty minutes later, this meal was removed and analyzed. We soon found that, if the bread and water remained in the stomach much longer than thirty minutes, the stomach was empty and the secretions and acids were low. In other words, the gastric secretions in dogs supplied with practically the Ewald meal were at the highest about thirty minutes after feeding. After a dozen or more test meals were given to each dog, and a fairly accurate average estimation could be made of the gastric secretion, these dogs were subjected to laparotomy. At the first operations the gall-bladder was opened and filled with cinders and pebbles. Then, again, about a dozen or more analyses were made. After that period, the dogs were operated on a second time, at which time the appendix was opened and filled with foreign bodies, which were fixed there with sutures. The appendix in the dog is, of course, rather a diverticulum of the cecum than a real appendix as in man. After the operation on the appendix, a third series of gastric analyses was made. Following these operations and analyses, if death had not occurred, a third laparotomy was performed, or the animal was bled to death in some other experiment and a post-mortem examination was made to see what pathologic conditions had been caused by the former operations. Out of a number of dogs secured for these experiments, only seven survived all this analytical work and all these surgical operations.

The information which we have gained from these surgical operations, fifteen in all, and from the gastric analyses, exceeding 500 in number, is in our estimation worthy of consideration. Though only seven dogs were kept for any length of time, and subjected to operations with gastric analyses before and after, several dogs were kept under observation and subjected to analysis only. We soon found that the study of these numerous test meals was of no value or constancy, unless done with much caution and care. Even then, there was considerable variation in the gastric acidity, which indeed was the only secretion studied, including free hydrochloric acid, combined hydrochloric and total acidity.

When the dogs were given the Ewald meal at noon, as previously described, and then fed again with meat and other food soon after the Ewald meal was removed, but not any oftener that day, there was a fairly constant acidity. If, however, the dogs were fed oftener and excessively the remainder of the day, the following day the acids were higher, even though the test meal given at noon was the first food of that day. On the contrary, we also noticed that, when the dogs were starved for forty-eight hours and then given the test meal, the acidity was constantly and markedly very much lower. This notice of a hypo-acidity after hunger or starvation came in a peculiar way. At one time daily analyses were begun on six new, healthy dogs. After several analyses were made on each one it was suddenly noticed that on alternate days the acids were high one day and very low the next. The variation was so great and constant that the physicians who made all the analyses could not overlook or explain it, until they found that, by some misunderstanding of the man who fed the dogs, the animals were given food after the removal of the test meal only every second day. They were then very hungry and ate much. The day following such a full meal the acids were generally high, but the second day thereafter, without any food for forty-eight hours, they were just as constantly low. At another time we secured several new dogs, on which gastric analyses were impossible or of little value, except for one point, the influence of excitement on the secretion. While most of the dogs usually took the stomach-tube and test meal without any difficulty, these dogs fought such a procedure stubbornly. Very rarely could we recover a meal from these dogs. If taken at all, it had to be taken promptly at the end of half an hour; then it was very acid. Sometimes the animal fought the introduction of the tube and meal so stubbornly that vomiting and diarrhea immediately followed. These dogs were not kept long, though long enough to make us believe that excitement caused increased acidity and peristalsis.

A summary of the analytical work done on three dogs only will be given.

Dog 1.—This dog had eight analyses before any operation, in which the average gastric total acidity was 60. At his first operation the gall-bladder was filled with pebbles. This was followed by sixteen analyses, giving an average total acidity of 54. At a second operation on the dog the appendix also was filled with pebbles, which were held in place by purse-string sutures. The gall-bladder was examined at the time and found to be contracted and adherent to the liver. The stomach was free. The second operation was followed by nineteen gastric analyses, with an average total acidity of 75. At a third operation the appendix was found to be somewhat adherent to the bowels, but not entirely obliterated. More foreign bodies were placed in the appendix and this operation was followed by twenty-six analyses, with an average total acidity of 72. When, later, the animal was bled to death, many adhesions were found around the appendix, gall-bladder and intestines though the stomach was free from adhesions. The acidity had risen 25 per cent.

Dog 2.—This dog had seven gastric analyses, with an average total acidity of 43. The gall-bladder operation was followed by eight analyses, with an average total acidity of 42. This, again, was followed by an operation on the appendix and examination of the gall-bladder. This last operation was followed by eighteen analyses, with an average total acidity of 57, the last series of examinations showing an increased total acidity of 30 per cent. This dog, however, died from intestinal obstruction, and the last six analyses showed a gradual lowering acidity. At post-mortem examination it was found that dense adhesions about the appendix and bowels caused intestinal obstruction and death. It will be noticed, therefore, that, in spite of the gradual lowering of acidity in the last six analyses prior to death, the last series of examinations, including the last six, had an increased acidity.

Dog 3.—This dog had thirteen gastric analyses, with a total acidity of 92. This was followed by an operation on the gall-bladder, filling the gall-bladder with pebbles. Eighteen analyses were then made, showing an average acidity of 82, a reduction of ten points. At a second operation the appendix was filled with pebbles and the stomach was found adherent to the gall-bladder and abdominal wall. Thirteen analyses were then made, with an average total acidity of 56. When the dog was finally bled to death, dense adhesions were found binding together the stomach, gall-bladder, intestines, appendix and omentum, and even the abdominal wall. This dog, therefore, showed a diminution of total acidity from 92 to 46, almost 40 per cent. The extensive adhesions certainly interfered with the gastric function.

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mental work now indicate, was secondary to lesions of the digestive tract in organs surrounding the stomach.

I regret that my own tabulated report of very positive diagnoses of appendicitis and gall-bladder disease is so limited. It may be worthy of mention, however, that, in 54 per cent. of the fifty-six cases of acute and chronic appendicitis seen the last few years in private practice, examinations, including gastric analyses, were made. And, of the cases in which these gastric analyses were made, 83 per cent. showed a hyperacidity. In nearly all of the cases diagnosed as appendicitis the advice for operation was warranted, but only 65 per cent. of these gastric [illegible] surgically, three-fourths of which had acidity. It will be noticed [illegible] hyperacidity in 75 per work, though not as extensive as we [illegible]fore, that of the two features very similar to the clinical [illegible]perated on, namely, a decrease of gastric acidity following [illegible] mation, shock or impaired gastric motility, and an [illegible] crease of gastric acidity when the function of the perigastric organs only was impaired by adhesions and the stomach left free.

Bashford, at the head of the Imperial Cancer Research Laboratory, in London, reports the findings of the gastric analyses of 500 mice inoculated with cancer. Most of the mice inoculated, of course, had cancer in organs not affecting the stomach. The analyses of these 500 mice showed a gastric hyperacidity. The hyperacidity could be explained only as a compensatory feature. This gastric hyperacidity of mice afflicted with cancer not affecting the stomach is quite a contrast to the hypo-acidity found in human beings afflicted with cancer affecting the stomach.

It will be noticed that this study of gastric secretions was not made on animals with the Pawlow fistula, inasmuch as the establishment of the Pawlow fistula, though ideal for certain studies of gastric secretion, would have required some adhesions between the stomach and the abdominal wall, which alone would have made rather indefinite a study of the influence of adhesions affecting the other organs, which concerned us more especially.

The terms "perigastric lesions" and "perigastric organs" have been used merely to avoid the more technical and frequent reference to the many abdominal structures and pathologic conditions either very close to or more distant from the stomach. There is no doubt that the functions of the liver, spleen pancreas and uterus, when changed by disease, have an influence on the stomach also.

CONCLUSIONS

It seems to me that this clinical and experimental study warrants the conclusion that the frequent diagnosis of nervous dyspepsia with hyperacidity should not be dismissed as a neurosis without caution. Likewise, many cases of hypo-acidity, even when occult blood and lactic acid are present in the gastric secretion, often demand an explanation beyond the stomach itself.

A summary of the experimental work showed, (1) a decrease of acidity during starvation; (2) an increase of acidity following excitement; (3) a decrease of acidity from lesions causing inflammation and shock and greatly impaired motility; and (4) an increase, perhaps compensatory, when the function of the perigastric organ is impaired by adhesions. While this study, of course, is not conclusive it is reported simply as a matter of interest, with the hope that others interested in the physiology and diseases of the gastro-intestinal tract may investigate the subject more completely. conditions of other abdominal organs, though it was not his experience to notice this frequency of gastric hyperacidity.

Paterson,[2] of London, only a few months ago, expressed his surprise at the frequency of gastric symptoms and the change in gastric secretions caused by appendicitis. In his opinion, the many symptoms of gastric ulcer and even gastric hemorrhage were found at times, by study as well as at operation, to be the sequel of appendicitis. In a few of his cases there was a normal acidity, in about 30 per cent. a hypo-acidity, and in the remaining a marked hyperchlorhydria. He says that "a combination of marked symptoms of gastric ulcer with a negative gastric analysis is suggestive of chronic appendicular disease," and that "in recent years it is becoming gradually recognized that hematemesis, accompanied by pain and vomiting, is not pathognomonic of gastric ulcer." His statement that a gastro-enter-whic[illegible]tomy will not remove a diseased appendix is strikingly tient wi[illegible]nt. While my experience is not exactly parallel has been perfo[illegible]Paterson, since mine shows appendicitis stomach will be relieved[illegible]itive change in gastric secretion

Dr. James T. Pilcher, Brooklyn: After a [illegible] yet 7,000 gastric analyses I wish to confirm Dr. Lichty's observations as regards the tendency to increased acidity of the gastric juice in cases in which there is gall-bladder involvement. However, as he so well pointed out, the other extreme is frequently encountered. While acknowledging the tendency to an increase of the hydrochloric acid content of the gastric juice in the majority of the cases of gall-bladder involvement in any of its many phases, I wish also to call attention to the fact that the other extreme may also be reached; in proof of this fact I will mention thirty-two cases of gall-bladder involvement and fifteen cases of combined gall-bladder and pancreatic involvement in which there was present, at the time of operation, a condition of achlorhydria hemorrhagica gastrica. Appreciating this, is is obvious that the conclusion that in all cases of gall-bladder involvement there is an increase in the acidity of the stomach would be erroneous in the large majority of the instances, although it obtains, as has been noticed, in some 300 cases which I have had the opportunity of examining.

I wish further to congratulate Dr. Lichty on emphasizing so strongly and expounding so clearly the fact that in cases of so-called *hyperchlorhydria we have not to do essentially* with the stomach, but should seek the etiologic factor which is giving rise to reflex gastric symptoms. The question is certainly a pertinent one. Is there any such a condition as hyperchlorhydria *per se?* The indications certainly point against it and it will only be through such experiments as have been carried on by Dr. Lichty that we can come to any definite conclusions. The work so far accomplished I am sure is more than indicative that many of the dictums laid down so precisely in the text-books on the subject are in some respects fallacious and will shortly require a complete revision.

Dr. A. L. Benedict, Buffalo, N. Y.: The stomach is, to a large degree, an indicator of disease of other organs. For instance, in 100 serial "stomach cases" I found that 80 patients were either entirely normal so far as gastric secretion, etc., were concerned or, at most, showed only trivial gastric disturbances. The underlying condition was chronic colitis, typhlitis or even localized inflammation of the appendix, gall-stones, etc. Thus, we may well expect reflex variation in the condition of the stomach contents. Still, in actual practice, following a uniform technic, it is surprising to note that the analyses repeated in any given case, almost always give consistent results. Several years ago, in the American Gastro-Enterological Association, several cases of hyperchlorhydria due to gall-stones were reported. My experience is that gall-stones frequently give a typical clinical picture of hyperchlorhydria, more typical in fact than most cases of genuine hyperchlorhydria, but that on actual analysis, the stomach contents are of very low acidity. Do not understand me, however, as deny-investigation of this subject from an experimental basis. Experiments on a number of dogs were begun two years ago and have been continued constantly since, with some very satisfactory and surprising results. The method of experimentation, briefly described, was as follows:

A number of healthy dogs were secured and a study was made of their gastric secretions. At definite intervals of two or three days the dogs were not fed until noon; then a meal of about 8 ounces of water, containing bread sufficient in quantity to make a gruel, was inserted into the stomach with a bulb and a stomach-tube. Thirty minutes later, this meal was removed and analyzed. We soon found that, if the bread and water remained in the stomach much longer than thirty minutes, the stomach was empty and the secretions and acids were low. In other words, the gastric secretions in dogs supplied with practically the Ewald meal were at the highest about thirty minutes after feeding. Aftgrees dozen or more test meals were given to each do nereas, if fairly accurate average estimation could b00 c.c. ingested, *gastric secretion, these dogs* were and the 25 *degree* standomy. At the first [illegible] basis for the diagnosis of hyperchlorhydria.

Now as to the exaggeration of the reading: using dimethyl-amido-azobenzol as an indicator, the end-point for free hydro*chloric acid is at the transition from a* distinct cherry red to a color almost exactly like that called cerise. We would naturally suppose that cherry-red and cerise meant the same tint but they do not. Beyond this end-point, the further addition of alkali produces changes, through orange to a straw yellow, for somewhere about 10 or even 15 degrees. One can readily see that a man who titrates to the final change, in estimating his free hydrochloric acid and perhaps overruns, at that, and who has started with the assumption that anything beyond 20, or perhaps 15 degrees of free hydrochloric acidity, is an excess, will find hyperchlorhydria, not only in normal cases, but in those in which there is a moderate hypochlorhydria—hence, a lot of nonsense about hyperchlorhydria associated with organic fermentation.

DR. G. C. SMITH, Boston: Ewald, several years ago when lecturing to students who came to him from all over the world to study diseases of the stomach, made the statement that 98 per cent. of all diseases with symptoms referable to the stomach originate from outside the stomach.

DR. GUSTAV BAAR, Portland, Ore.: What do we want to know when we see these cases? Shall we, as internists, attempt to cure these patients, or shall we turn them over to the surgeon? What are the additional signs and symptoms we can have besides hyperacidity which will enable us to determine whether we are dealing with some gastric trouble or with some extragastric trouble—appendicitis, perigastritis, etc.? In an examination of 10,000 urines, routine tests were made for indican and in nearly all hyperacidity cases caused by extragastric disturbances it was found constantly present. The constant presence of excessive indican in the urine means some anatomic disturbance of the gastrointestinal wall and calls for surgery.

DR. JOHN A. LICHTY, Pittsburg, Pa.: I have noticed in my clinical experience that many patients have consulted me for disturbances of the stomach when, in truth, the trouble was elsewhere. Many of them had hyperacidity and often there was a high *percentage* of free *hydrochloric acid.* They had also the typical symptoms of hyperchlorhydria. Many had been treated previously from time to time as "nervous dyspeptics." Three or four years ago, when at Leeds, I had an opportunity of referring to these cases in conversation with Mr. Moynihan, who impressed on me the fact that these patients were probably suffering from duodenal ulcer and might at any time have perforation. When I returned to my work, I continued my observations, but did not see a single instance of perforating duodenal ulcer. I did, however, find every now and then one of these patients with an attack of acute appendicitis from one day to the next. The variation was so great and constant that the physicians who made all the analyses could not overlook or explain it, until they found that, by some misunderstanding of the man who fed the dogs, the animals were given food after the removal of the test meal only every second day. They were then very hungry and ate much. The day following such a full meal the acids were generally high, but the second day thereafter, without any food for forty-eight hours, they were just as constantly low. At another time we secured several new dogs, on which gastric analyses were impossible or of little value, except for one point, the influence of excitement on the secretion. While foreign body intro-
dogs usually took the stomach ly showed an increased acidity
out any difficulty gastric motility. These results are in accord
stubbornly per which has just been read.

these DR. M. J. LICHTY, Cleveland, Ohio: It has been noticed for at some time that frequently gastric disturbances are present clinically, when the real trouble has been in other organs; just why this is so does not seem entirely clear to us at present. We frequently see high acidity of the gastric juice when there are gall-stones; and the high acidity disappears on the removal of these gall-stones. I have in mind an individual who had gall-stones and with this condition a high acidity, but when the gall-stones were removed the man became perfectly well. I am glad that Dr. Pilcher has called attention to the terms hyperacidity and hypersecretion. I did not mean to use them synonymously in the paper. Of course the terms signify different conditions, and these two conditions should be studied more both clinically and experimentally.

The question has been asked, What shall we do with these cases of disturbed secretions? We certainly should not subject all these patients to operation at once, though when these rather obscure cases do not improve under systematic treatment, they should require further study and operation may be necessitated. A patient recently referred to me on account of stomach trouble had no symptoms whatever except vomiting which had existed for weeks. At my first examination, I found some tenderness over McBurney's point and was rather confident that there was an unrecognized appendicitis. Operation proved it so and removed the symptoms.

I recall another patient who had gastric symptoms, but in whom I noticed, after repeated examinations, an occasional slight tenderness over the region of the appendix. This patient has been treated some years before for gastro-intestinal trouble by a physician whose practice is now confined to surgery. The same man was called in consultation and hesitated to confirm the diagnosis of chronic appendicitis. At last he approved of operation; and when he operated he could hardly find the little appendix, half obliterated and buried with many dense adhesions; but while removing it with great difficulty he remarked: "Here was likely the trouble when I treated this patient eleven years ago for dyspepsia."

Cholera Germs in Food.—P. Pospelow reports the results of extensive research in this line in the Russian *Wojenno Journal,* April, 1910, stating that the cholera vibrio is liable to persist unmodified in food, as it does not seem to be affected by the composition of the food or symbiosis with other micro-organisms or by changes in temperature. It is, however, extremely sensitive to the drying out of the medium and to the action of acids. It degenerates in acid and salted foods. It proliferates in solid and fluid media rich in organic elements, but degenerates in water free from organic elements. Dilution of wine and of contaminated water kills the cholera germs in from ten to fifteen minutes. They also die off in beer, but not so rapidly; this destructive action depends on the acid content and the content in acid salts rather than on the alcohol content, as the germs survive for five hours and over in diluted whiskey (*Kornbranntwein*). Pospelow's article was summarized in the *St. Petersb. med. Wchnschr.*, Oct. 8, 1910.

From the analyses made on dogs subjected to operations, we were able then to draw two other conclusions. First, it was noticeable that dogs showing depression or shock following operation had a very uniform lowering of the gastric acidity. The acidity was also lowered when there were adhesions around the stomach, whether binding it to gall-bladder alone, or to the gall-bladder and bowels and abdominal wall. Second, it was noticed that those dogs which [illegible] poliomyelitis acuta, not only [illegible] and which were [illegible] profession, but by laymen as well. Many new facts regarding the pathology, and particularly the etiology, have appeared in medical articles in this time. Mention may be made of the brilliant work of Landsteiner and Popper[1] and Flexner and Lewis.[2] These and other workers have demonstrated the infectiousness of the disease, which is undoubtedly caused by some virus. Their writings have given us a number of new facts regarding the pathology, but nothing radically new in the treatment.

This article will deal only with the treatment of the prodromal and acute stages.

As yet, there is no specific treatment. Vaccine or antitoxin treatment is being vigorously sought by several laboratory workers at this time. Apparently some time may elapse before such treatment is discovered. Then, to follow such a discovery, a critical, practical experimental period must elapse before the new treatment becomes generally adopted.

An early diagnosis—one before the paralytic stage has resulted—is particularly to be desired. Two laboratory diagnostic means are now available which may be of great value in determining the presence of the disease before any serious or irreparable damage to the nerve cells of the anterior horn has occurred. The blood-count shows an early mild leukocytosis with a decided increase in the lymphocytes and a decrease in the polymorphonuclear leukocytes. Lumbar puncture has usually demonstrated a mild increase in lymphocytes of the cerebrospinal fluid. There have been some cases observed with no increased cells in the cerebrospinal fluid, but it is possible that at some stage of the disease they may have been increased.

In a number of cases in which I have been called in consultation, drugs have been used to excess, particularly purgatives. There is no objection to using laxatives moderately in most of the cases. Ergot has been employed, but I believe that it is contra-indicated. I can see no reason why a drug which contracts the smaller arteries should be given in a condition in which the blood-supply of nervous centers is already diminished by a too small caliber of the smaller vessels. The iodids have been given, but have no value during the acute stage. One of the most important therapeutic means is rest. It is possible that if absolute rest could be obtained for a few days before the paralysis is due to appear, many cases would abort without paralysis. It is possible that the comparatively high percentage of the paralyses of the lower extremities may be accounted for by the increased blood-supply required for the nervous centers in the lumbar enlargement containing the motor cells for the lower extremities.

I wish to express my thanks to Drs. Stoner and Rogoff, who have done the many analyses with great care and labor and accuracy, as well as to Dr. Hambleton who did all the surgical operations on the dogs.

183 Eighty-Second Street.

ABSTRACT OF DISCUSSION

Dr. DeLancey Rochester, Buffalo, N. Y.: In a paper pre- Hexamine [illegible] before the Medical Society of the State of New these patients. A number of experiments were reported strated that this chemical can be recovered from all of the secretions and excretions of the body in a short time after its ingestion. Crowe, at the suggestion of Cushing, demonstrated experimentally on animals and man that formaldehyd is present in the cerebrospinal fluid thirty minutes after the administration of hexamethylenamin (urotropin).[3] It is probably better to give the drug in as large doses as is safe over a period of a few hours, and then discontinue it for about twenty-four hours. My method is to give from 0.12 to 0.24 gm. to a child 2 to 4 years of age, giving a dose every hour until three doses have been given. No more is then given until the following day at the same hour, when it is repeated in the same manner. This repetition may be employed as long as acute symptoms persist. Thus, we suddenly load the body with the chemical, and then allow a short period of rest. We might give 3 to 8 gm. of the drug to the adult during the daily three or four-hour period of its administration.

During the past two months I made a diagnosis of poliomyelitis acuta in five cases in the prodromal stage. The hexamethylenamin treatment, as outlined above, was given to all these patients and three made recoveries without any paralysis. One child, cared for under unfavorable circumstances, died; and another, whose case was of the *foudroyant* type, developed paralysis. Hexamethylenamin has also been given to a few children in families in which there was great fear that others might contract the disease.

Some of the patients suffer from much pain and hypersensitiveness. To these may be given some form of the salicylates, preferably sodium salicylate or acetylsalicylic acid (aspirin). I have found the latter more agreeable for children. I have obtained much relief in a few cases by applying a heavy cotton dressing to the involved extremities. Partial immobilization may have been a factor in the results obtained.

We now have sufficient evidence at hand, experimentally and clinically, to warrant instituting some kind of isolation and care to prevent the transmission of the virus. A few health boards now include poliomyelitis acuta among the diseases to be reported. The Kansas State Board of Health at a meeting in June, 1910, made a rule that all cases of poliomyelitis acuta must be reported to the proper health officers, and a sign bearing the words "Infantile Paralysis" posted on the house; and that all people not required to care for the patient be prohibited from entering the sick-chamber.

In private practice, I direct that the patient be kept alone in one room, and only those actually required for care and nursing be permitted to enter. Instructions are given to sterilize by boiling or chemicals all articles used by the patient and to disinfect secretions and excreta.

402 Argyle Building.

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* A contribution from the Kansas State Board of Health and the University of Kansas Medical School.

[1] Landsteiner and Popper: Uebertragung der Poliomyelitis acuta auf Affen, Ztschr. f. Immunitätsforsch. exper. Therap., May 25, 1909, ii, No. 4.

[2] Flexner, Simon, and Lewis, Paul A.: Transmission of Acute Poliomyelitis to Monkeys, The Journal A. M. A., Nov. 13, 1909, p. 1639; Dec. 4, 1909, p. 1913; Experimental Epidemic Acute Poliomyelitis in Monkeys, Jour. Exper. Med., xii, 227.

[3] Crowe: The Excretion of Hexamethylenamin (Urotropin) in the Cerebrospinal Fluid and Its Therapeutic Value in Meningitis, Bull. Johns Hopkins Hosp., April, 1909, xx, No. 217.

ing that there may be genuine hyperchlorhydria in gall-stone cases.

One more point: Many men speak of hyperchlorhydria as a common condition and one that can be diagnosed symptomatically. I do not believe that it can ever be positively diagnosed except by analysis. Furthermore, there is an unfortunate tendency both to exaggerate the degree of hydrochloric acidity and to accept a low standard of normal acidity. The hydrochloric acid of gastric juice is normally about 20 to 10,000, corresponding approximately to 50 degrees by N/10 alkali. For chyme, we may assume, approximatel[illegible] cent. dilution of [illegible] hydrocl[illegible]

[illegible] developed an extraordinary [illegible] and gives wide-spread metastasis. Work with it has brought out facts which bear largely on the general problem of tumor metastasis and tumor immunity.

The sarcoma has passed through six generations of inoculated fowls during the last thirteen months. It is of spindle-celled variety and has throughout remained true to type. In the degenerated portions true mucin may be found. The specificity which at first limited its successful transmission to fowls of the same pure-bred stock in which the growth arose has been to some extent overcome. It now grows in about 85 per cent. of these pure-bred fowls—light, barred Plymouth Rocks—and in an occasional individual that shows by its plumage the slight admixture of some darker strain; but it grows only in Plymouth Rocks. Retrogressions of the developed tumor are rare.

The increase in the malignancy of the sarcoma followed the use of young hosts. Prompt invasion and metastasis are now the rule. Grafts removed and examined three days after implantation are found vascularized, and the sarcoma cells have already pushed into the host's tissues well beyond the boundary of the introduced bit. A fragment 1 to 2 mm. in diameter, placed with a trochar in the breast muscle, may give rise in the course of a month to a mass measuring 8 by 4.8 by 4.2 cm. From clavicle to lower sternum the muscle fibers are almost completely replaced by tumor. The host rapidly emaciates, becomes cold, weak and somnolent and shortly dies.

Metastasis takes place through the blood-stream and much more rarely through the lymphatics. The lungs are often almost completely replaced by coalescing growths, and less frequently the liver and kidneys show nodules. The serous membranes may be penetrated and a wide-spread peritoneal dissemination follow. Intraperitoneal growths may cause intestinal occlusion, or may unite viscera that lie far apart into a common mass. In general the secondary tumors spare or affect the same organs as in mammals, the spleen, for example, enjoying an almost complete immunity as compared with the lungs, liver and kidneys. The reason for this freedom of the spleen from tumor metastasis is not apparent.

Metastases appear in the heart with great constancy, a feature not seen in mammals. Both sides of it are involved about equally often and the organ may be almost completely replaced by tumor tissue before the host dies. In such cases it is found greatly enlarged, pale, stiff and roughened by growths that have broken through on its surface. The pericardium is thickened with contact metastases.

Metastases develop best when the primary tumor grows slowly. When it grows rapidly the host dies before the secondary nodules have had time to reach a large size. In such animals great numbers of minute metastases are found, but apparently a sufficient interval

dicitis or an attack of gall-bladder or gall-duct trouble, and, at the operation, the pathology revealed, always showed that attacks must have occurred previously, the history of which I was unable to get, and that the whole train of symptoms must have been due to the lesion found. It occurred to me that probably hyperchlorhydria was an accompanying symptom of gall-bladder, or appendix affection. For this reason, I experimented on dogs to determine whether a foreign body in the gall-bladder or in the appendix or the adhesion produced mig[illegible] disturbance of gastric function

A study of grafts of the sarcoma [illegible] was used and intervals from susceptible fowls, and fowls with a[illegible] natural or acquired resistance, has shown that this resistance does not depend on the absence of a supporting and vascularizing reaction for the graft—a phenomenon held by many to be of primary importance in tumor immunity. It is true that an absence of such a supporting reaction is not infrequently responsible for the death of grafts in the resistant animal, especially when they have been placed in a site where connective tissue is nearly wanting; but in by far the greater number of cases the graft undergoes vascularization. Its success is nevertheless of short duration. In the first few days after inoculation, while it is growing and seems healthy, there occurs a rapid accumulation of small round cells, (lymphocytes) first about the near-by blood-vessels, then extending around and into the tumor graft. A week from the time of its implantation this is so inclosed by small round cells (and to a much less degree by large mononuclears, plasma-cells and fibroblasts) that on a casual glance one would think it part of a lymph-gland. At this time it is, as a rule, rapidly degenerating, although well vascularized. Exceptionally it does not die but continues to proliferate, despite the indications of resistance by the host, and eventually establishes itself. In susceptible fowls one finds at the edges of the growing tumor a less marked reaction of the sort described. There are traces of it about the original neoplasm. It is not called forth by material killed by heat (60 C. for thirty-five minutes) or repeated freezing and thawing.

Immunity in the case of this chicken sarcoma does not then depend primarily on the absence from the host tissues of a supporting reaction and vascularization for the graft. There are indications in the literature that this phenomenon, so obvious in rats and mice, is here also secondary to less understood processes. Burgess[2] examining grafts removed from mice racially insusceptible to the tumor inoculated, has found them vascularized and growing for a short period, then surrounded by granulation tissue and degenerating. Da Fano[3] after a careful histologic study of tumor grafts in mice, and of the sparse cellular reaction about them, has come to the conclusion that lymphocytes are in some way connected with tumor immunity. About the growing tumors of man lymphocytes are not infrequently seen in considerable numbers.

The conclusion seems justified that resistance to tumor growth can no longer be considered to depend *primarily* on a failure of the host to provide a stroma and vascularization for the neoplastic cells. Both may be provided by the resistant host, and yet the tumor dies. Whether the lymphocytes which accumulate about it, or, some factor unknown, is responsible for this result, has yet to be investigated.

The chicken sarcoma has recently been cultivated *in vitro* by Drs. Carrel and Burrows.[4]

Sixty-Sixth Street and Avenue A.

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[*] From the laboratories of the Rockefeller Institute for Medical Research.

1. Rous, Peyton: Jour. Exper. Med., 1910, xii, 696.

2. Burgess, A. M.: Jour. Med. Research, 1909, xxi, 575.
3. Da Fano, C.: Ztschr. f. Immunitätsforsch, 1910, v, 1.
4. Carrel, A., and Burrows, M. J.: Cultivation of Sarcoma Outside of the Body, THE JOURNAL A. M. A., Oct. 29, 1910, lv, 1554.

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183 Eighty-Second Street.

ABSTRACT OF DISCUSSION

Dr. DeLancey Rochester, Buffalo, N. Y.: In a paper pre- Hexamine [illegible] before the Medical Society of the State of New these patients. A number of experiments were reported strated that this chemical can be recovered from all of the secretions and excretions of the body in a short time after its ingestion. Crowe, at the suggestion of Cushing, demonstrated experimentally on animals and man that formaldehyd is present in the cerebrospinal fluid thirty minutes after the administration of hexamethylenamin (urotropin).[3] It is probably better to give the drug in as large doses as is safe over a period of a few hours, and then discontinue it for about twenty-four hours. My method is to give from 0.12 to 0.24 gm. to a child 2 to 4 years of age, giving a dose every hour until three doses have been given. No more is then given until the following day at the same hour, when it is repeated in the same manner. This repetition may be employed as long as acute symptoms persist. Thus, we suddenly load the body with the chemical, and then allow a short period of rest. We might give 3 to 8 gm. of the drug to the adult during the daily three or four-hour period of its administration.

During the past two months I made a diagnosis of poliomyelitis acuta in five cases in the prodromal stage. The hexamethylenamin treatment, as outlined above, was given to all these patients and three made recoveries without any paralysis. One child, cared for under unfavorable circumstances, died; and another, whose case was of the *foudroyant* type, developed paralysis. Hexamethylenamin has also been given to a few children in families in which there was great fear that others might contract the disease.

Some of the patients suffer from much pain and hypersensitiveness. To these may be given some form of the salicylates, preferably sodium salicylate or acetylsalicylic acid (aspirin). I have found the latter more agreeable for children. I have obtained much relief in a few cases by applying a heavy cotton dressing to the involved extremities. Partial immobilization may have been a factor in the results obtained.

We now have sufficient evidence at hand, experimentally and clinically, to warrant instituting some kind of isolation and care to prevent the transmission of the virus. A few health boards now include poliomyelitis acuta among the diseases to be reported. The Kansas State Board of Health at a meeting in June, 1910, made a rule that all cases of poliomyelitis acuta must be reported to the proper health officers, and a sign bearing the words "Infantile Paralysis" posted on the house; and that all people not required to care for the patient be prohibited from entering the sick-chamber.

In private practice, I direct that the patient be kept alone in one room, and only those actually required for care and nursing be permitted to enter. Instructions are given to sterilize by boiling or chemicals all articles used by the patient and to disinfect secretions and excreta.

402 Argyle Building.

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* A contribution from the Kansas State Board of Health and the University of Kansas Medical School.

[1] Landsteiner and Popper: Uebertragung der Poliomyelitis acuta auf Affen, Ztschr. f. Immunitätsforsch. exper. Therap., May 25, 1909, ii, No. 4.

[2] Flexner, Simon, and Lewis, Paul A.: Transmission of Acute Poliomyelitis to Monkeys, The Journal A. M. A., Nov. 13, 1909, p. 1639; Dec. 4, 1909, p. 1913; Experimental Epidemic Acute Poliomyelitis in Monkeys, Jour. Exper. Med., xii, 227.

[3] Crowe: The Excretion of Hexamethylenamin (Urotropin) in the Cerebrospinal Fluid and Its Therapeutic Value in Meningitis, Bull. Johns Hopkins Hosp., April, 1909, xx, No. 217.

ing that there may be genuine hyperchlorhydria in gall-stone cases.

One more point: Many men speak of hyperchlorhydria as a common condition and one that can be diagnosed symptomatically. I do not believe that it can ever be positively diagnosed except by analysis. Furthermore, there is an unfortunate tendency both to exaggerate the degree of hydrochloric acidity and to accept a low standard of normal acidity. The hydrochloric acid of gastric juice is normally about 20 to 10,000, corresponding approximately to 50 degrees by N/10 alkali. For chyme, we may assume, approximatel[illegible] cent. dilution of [illegible] hydroc[illegible]

[illegible] eveloped an extraordinary [illegible] and gives wide-spread metastasis. Work with it has brought out facts which bear largely on the general problem of tumor metastasis and tumor immunity.

The sarcoma has passed through six generations of inoculated fowls during the last thirteen months. It is of spindle-celled variety and has throughout remained true to type. In the degenerated portions true mucin may be found. The specificity which at first limited its successful transmission to fowls of the same pure-bred stock in which the growth arose has been to some extent overcome. It now grows in about 85 per cent. of these pure-bred fowls—light, barred Plymouth Rocks—and in an occasional individual that shows by its plumage the slight admixture of some darker strain; but it grows only in Plymouth Rocks. Retrogressions of the developed tumor are rare.

The increase in the malignancy of the sarcoma followed the use of young hosts. Prompt invasion and metastasis are now the rule. Grafts removed and examined three days after implantation are found vascularized, and the sarcoma cells have already pushed into the host's tissues well beyond the boundary of the introduced bit. A fragment 1 to 2 mm. in diameter, placed with a trochar in the breast muscle, may give rise in the course of a month to a mass measuring 8 by 4.8 by 4.2 cm. From clavicle to lower sternum the muscle fibers are almost completely replaced by tumor. The host rapidly emaciates, becomes cold, weak and somnolent and shortly dies.

Metastasis takes place through the blood-stream and much more rarely through the lymphatics. The lungs are often almost completely replaced by coalescing growths, and less frequently the liver and kidneys show nodules. The serous membranes may be penetrated and a wide-spread peritoneal dissemination follow. Intraperitoneal growths may cause intestinal occlusion, or may unite viscera that lie far apart into a common mass. In general the secondary tumors spare or affect the same organs as in mammals, the spleen, for example, enjoying an almost complete immunity as compared with the lungs, liver and kidneys. The reason for this freedom of the spleen from tumor metastasis is not apparent.

Metastases appear in the heart with great constancy, a feature not seen in mammals. Both sides of it are involved about equally often and the organ may be almost completely replaced by tumor tissue before the host dies. In such cases it is found greatly enlarged, pale, stiff and roughened by growths that have broken through on its surface. The pericardium is thickened with contact metastases.

Metastases develop best when the primary tumor grows slowly. When it grows rapidly the host dies before the secondary nodules have had time to reach a large size. In such animals great numbers of minute metastases are found, but apparently a sufficient interval

dicitis or an attack of gall-bladder or gall-duct trouble, and, at the operation, the pathology revealed, always showed that attacks must have occurred previously, the history of which I was unable to get, and that the whole train of symptoms must have been due to the lesion found. It occurred to me that probably hyperchlorhydria was an accompanying symptom of gall-bladder, or appendix affection. For this reason, I experimented on dogs to determine whether a foreign body in the gall-bladder or in the appendix or the adhesion produced might [illegible] disturbance of gastric function

A study of grafts of the sarcoma [illegible] was used and intervals from susceptible fowls, and fowls with [illegible] natural or acquired resistance, has shown that this resistance does not depend on the absence of a supporting and vascularizing reaction for the graft—a phenomenon held by many to be of primary importance in tumor immunity. It is true that an absence of such a supporting reaction is not infrequently responsible for the death of grafts in the resistant animal, especially when they have been placed in a site where connective tissue is nearly wanting; but in by far the greater number of cases the graft undergoes vascularization. Its success is nevertheless of short duration. In the first few days after inoculation, while it is growing and seems healthy, there occurs a rapid accumulation of small round cells, (lymphocytes) first about the near-by blood-vessels, then extending around and into the tumor graft. A week from the time of its implantation this is so inclosed by small round cells (and to a much less degree by large mononuclears, plasma-cells and fibroblasts) that on a casual glance one would think it part of a lymph-gland. At this time it is, as a rule, rapidly degenerating, although well vascularized. Exceptionally it does not die but continues to proliferate, despite the indications of resistance by the host, and eventually establishes itself. In susceptible fowls one finds at the edges of the growing tumor a less marked reaction of the sort described. There are traces of it about the original neoplasm. It is not called forth by material killed by heat (60 C. for thirty-five minutes) or repeated freezing and thawing.

Immunity in the case of this chicken sarcoma does not then depend primarily on the absence from the host tissues of a supporting reaction and vascularization for the graft. There are indications in the literature that this phenomenon, so obvious in rats and mice, is here also secondary to less understood processes. Burgess[2] examining grafts removed from mice racially insusceptible to the tumor inoculated, has found them vascularized and growing for a short period, then surrounded by granulation tissue and degenerating. Da Fano[3] after a careful histologic study of tumor grafts in mice, and of the sparse cellular reaction about them, has come to the conclusion that lymphocytes are in some way connected with tumor immunity. About the growing tumors of man lymphocytes are not infrequently seen in considerable numbers.

The conclusion seems justified that resistance to *tumor growth can no longer be considered to depend primarily* on a failure of the host to provide a stroma and vascularization for the neoplastic cells. Both may be provided by the resistant host, *and yet the tumor dies.* Whether the lymphocytes which accumulate about it, or some factor unknown, is responsible for this result, has yet to be investigated.

The chicken sarcoma has recently been cultivated *in vitro* by Drs. Carrel and Burrows.[4]

Sixty-Sixth Street and Avenue A.

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* From the laboratories of the Rockefeller Institute for Medical Research.

[1] Rous, Peyton: Jour. Exper. Med., 1910, xii, 696.

[2] Burgess, A. M.: Jour. Med. Research, 1909, xxi, 575.

[3] Da Fano, C.: Ztschr. f. Immunitätsforsch, 1910, v, 1.

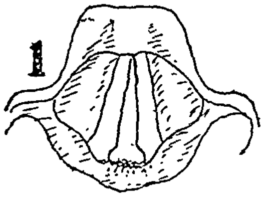
[4] Carrel, A., and Burrows, M. J.: Cultivation of Sarcoma Outside of the Body, THE JOURNAL A. M. A., Oct. 29, 1910, lv, 1554.

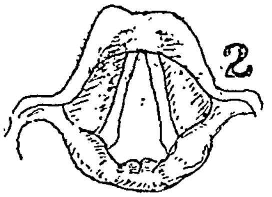
THE DIAGNOSIS AND TREATMENT OF THE EARLIER CHANGES IN THE LARYNX IN PULMONARY TUBERCULOSIS*

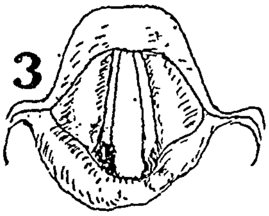
C. L. MINOR, M.D.
ASHEVILLE, N. C.

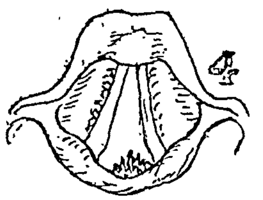
There is no more encouraging fact in the development of modern medicine than the interest that is being taken in the early diagnosis and the rational treatment of pulmonary tuberculosis. The medical profession must not be satisfied, however, with what has been accomplished, for satisfaction with one's own achievements rings the knell of all further progress; rather, physicians should keep their minds open to discern where the present practice is imperfect and be ready to correct flaws as soon as they are discovered.

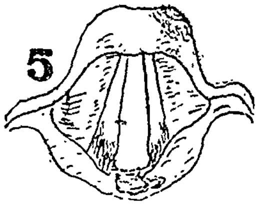
An important defect in the early diagnosis of tuberculosis is the fact that few physicians in the examination of such patients pay any attention to the condition of the larynx or are capable of making the necessary examination to determine the condition of this organ.











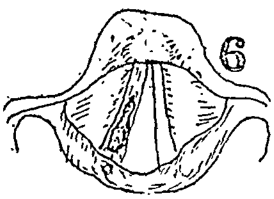


Fig. 1.—Gray wrinkling of posterior commissure, which is not diagnostic, but is suspicious if tuberculosis exists in the lungs. *It can be found in many cases of chronic laryngitis.*

Fig. 2.—Typical table-like elevation in posterior commissure, with central longitudinal groove. The mucous membrane over it is usually unduly red, but at times is edematous and yellowish. This is the [illegible] of Schroetter.

[illegible] f the right arytenoid region and reddening of [illegible] of the right and left cords, this last being very typical and often showing a small white ulcer at the processus vocalis. *Right false cord is slightly redundant.*

Fig. 4.—Granulations arising from an ulcer in the posterior commissure and hiding the ulcer.

Fig. 5.—Superficial dirty ulcer of posterior commissure invading its upper surface and thereby causing severe dysphagia. Thickening and ulceration of epiglottis. Thickening and redness of posterior ends of cords which are invaded by ulcer of posterior commissure.

Fig. 6.—Superficial ulcer of upper surface of right cord.

No examination of a tuberculous patient can be called satisfactory or thorough in which a laryngeal examination has not been made, and the value of this examination to the patient and to the physician in charge will be greatly increased if the latter has taken time to master the technic of laryngoscopy so that he can see the condition of things for himself and not through another's eyes, for no other man's report of what he has seen or found can begin to equal in its effect on the mind the results of one's own observations. Therefore, it is always greatly to be regretted when the physician has to depend on the report of another as to existing conditions in a patient, and while in view of the enormous growth of modern medicine this is necessary in many cases, notably as regards laboratory work, which no busy practitioner, however well-trained, has time to do for himself, laryngoscopy is so easily learned and so easy and quick of application when once learned that no physician who wishes to be thorough need say that he cannot master it or that he has not time to apply it.

Further, a review of the literature of the subject shows that the laryngeal conditions usually recognized and spoken of are not those early and curable changes which can be discovered only by the use of the laryngoscope, but rather relatively advanced alterations such as turbaned epiglottes, pear-shaped arytenoids, extensive ulcerations of cords or commissure or epiglottis, which produce symptoms. This explains why the profession looks on laryngeal tuberculosis as a *noli me tangere* and considers a diagnosis of such trouble as tantamount to a death sentence. If the physician would take the trouble to master laryngeal technic, not necessarily so thoroughly as to prepare himself to do endolaryngeal operations but so as to enable him easily and thoroughly to look at the larynges of patients and familiarize himself with the early changes which antedate the conditions I have noted, he would find many tuberculous throats which he had not suspected, and also that a much larger percentage of such patients can be cured than he had hitherto supposed. While I would not, of course, wish to be understood as saying that laryngoscopy is not a matter of skill, I am ready to assert that it is not an extremely difficult matter to learn to see the larynx clearly, and after a man has learned to see clearly he only needs brains and opportunity to learn to diagnose these conditions early.

If it becomes an accepted view that a laryngeal examination is a routine and essential part in every physical examination, it will not be long before the physicians learn that the prognosis in laryngeal tuberculosis is not what they have thought it to be, and it is to encourage such an attitude that this article is written.

The symptoms of early laryngeal tuberculosis are limited in number and not so valuable as the signs. The earliest is usually a mere weakening of the voice which may exist for a long time before any hoarseness appears; and here let me note that while hoarseness is a prominent and often an early symptom it is by no means always present, and that the case can advance considerably before it appears; sometimes, however, it is surprising how well the voice is retained despite extensive trouble. Next to a weak voice I would note a sense of dryness in the throat with which is soon associated an *insufferable localized tickling, scratching or pricking as* though a hair had been swallowed. In my experience, pain on swallowing is not usually an early symptom, although a consciousness of the larynx at such times, as if a lump were in the throat, comes soon.

The subjective symptoms, however, are relatively unimportant compared to the great importance of the objective signs. While it has been generally taught that pallor of the mucous membrane is the earliest change in this disease, recently several voices have been raised against this view, notably Lockard's in his recent book. I have not found this often an early sign, and I believe that catarrh with hyperemia is usually the first manifestation of beginning trouble, though, of course, this is not in itself at all diagnostic. Those who treat pulmonary tuberculosis have, I believe, an earlier opportunity of seeing the beginning lesions in the larynx than the laryngologist has, save in a health resort, for when a patient consults a specialist in a city it is usually for pronounced and troublesome symptoms, whereas, since pulmonary trouble usually greatly antedates laryngeal lesions, by systematically watching the throats of his pulmonary patients the physician often has the chance to see the very beginnings of the trouble.

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* Read before the National Association for the Study and Prevention of Tuberculosis, in Washington, D. C., May, 1910.

It is only when the catarrh referred to begins to localize itself and becomes unilateral and persistent that it becomes really suspicious; for it must be recalled that every pulmonary patient is unduly subject to ordinary laryngeal catarrh. An obstinate patchy catarrh localized, however, to one cord or to one arytenoid is highly suspicious, though not positively diagnostic, but such a localized condition occurring in a patient in whose lungs we know there is a tuberculous deposit, can safely be considered as tuberculous and the trouble is frequently on the same side as the lesion in the lung.

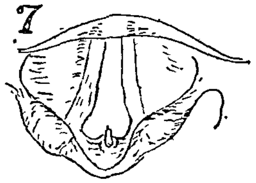
Next to this I would note as highly significant a grayish wrinkling of the posterior commissure (Fig. 1). This I believe to be the commonest early finding, but since it can be simulated by a chronic catarrh, such as is often seen in public speakers, it will not do to base a diagnosis on this alone. The earliest change which has real diagnostic significance is, in my experience, a tablelike elevation of the mucous membrane in the posterior commissure (Fig. 2). This generally occupies the center of the commissure, in which case it shows a vertical furrow or depression down its center, dividing it into two symmetrical halves; but it is frequently unsymmetrical and situated to one or the other side of the center. The color is generally grayish-pink, though at times it may be congested.

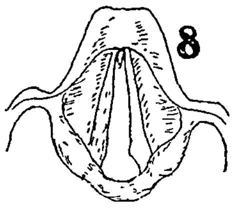
Such an elevation in this location I believe to be pathognomonic, and in this view have the support of so able an authority as Schnitzler. Such elevations tend to break down into shallow ulcers, though they may remain intact for a long time, but when ulceration does occur their tendency to fill up with exuberant pointed granulations (Fig. 4) often conceals their nature and causes them to pass for tuberculomata. Such infiltrations under suitable treatment may slowly but entirely disappear.

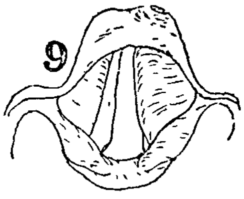
Next to the posterior commissure as a site of early changes is the vocal process, the posterior insertion of one cord, or the body of the cord itself. In the first case the cord at its posterior end is red, thickened and beefy (Figs. 3 and 5) and a small white ulcer tends finally to form and takes on a triangular shape, its apex forward at the vocal process, its base posteriorly at the commissure. When the cord itself is invoked it is at first congested and slightly thickened (Fig. 8), and finally becomes fleshy and spindle-shaped (Fig. 10), a very typical condition in this disease, while if it begins to ulcerate the area where the ulcer is to form looks pale and thickened.

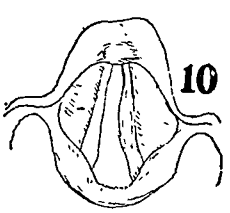
Ulcers of the cord, instead of being localized in one spot (Fig. 12) may be scattered along the edge, producing the characteristic nibbled-out appearance (Fig. 11). Tuberculous ulcers tend to be shallow, and of indefinite outline, to run together and to be multiple, and, if on the cord, are usually in its posterior one-third (Fig. 6). A longitudinal ulcer along the free edge of the cord and giving the impression that the cord is double or split, is a common but not an early change. Quite an early change is the thickening and yellowing of the false cords or ventricular bands which partially or totally hide the underlying cord and are very effective in producing hoarseness (Fig. 9). The upper surface often shows erosions or shallow greyish-yellow ulcers, but not usually early in the course of the case.

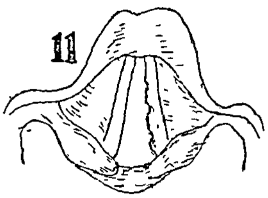
Very early in the disease we find some involvement of the arytenoid region, either localized congestions or anteroposterior thickenings (Fig. 3). In my experience the cartilage of Wrisberg shows reddening sooner than that of Santorini. Another typical change in the posterior commissure is the formation of pointed or round tuberculomata which, though they can resemble soft granulations, are surprisingly hard and firm to the touch and may persist unaltered for years (Fig. 3). Thickening of the ary-epiglottic folds is a more advanced change, but when present is pathognomonic. Likewise changes in the epiglottis do not occur early, though sometimes they can be foreshadowed for a long time as areas of slight thickening and reddening of its edge or posterior surface (Figs. 5 and 9).











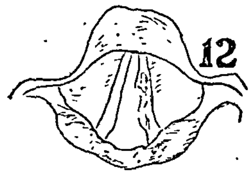


Fig. 7.—Hornlike growth in posterior commissure with reddening of posterior half of right cord.

Fig. 8.—Small growth protruding between cords in anterior commissure. Right cord is irregularly thickened and reddened.

Fig. 9.—Great thickening of left false cord which overlaps and hides the true cord. Arytenoids and posterior commissure somewhat thickened. Swelling and beginning ulcer on epiglottis.

Fig. 10.—Spindle-shaped thickening with reddening of the left cord. Reddening of petiolus of epiglottis.

Fig. 11.—Small ulcers on free border of left cord, giving characteristic nibbled-out appearance.

Fig. 12.—Spindle-shaped thickening and ulceration of left cord.

I might also mention as an early change, though a rare one, the protrusion of a small teat of red granulation beneath the anterior commissure (Fig. 8); when seen its diagnostic value is great.

Such are, I believe, the earliest changes to be found in the larynx in tuberculosis, and if the physician will examine every patient with pulmonary tuberculosis for laryngeal changes he will be surprised to find how large

Following the vaccination, usually within six to eight hours, a hyperemic area, about the size of the palm of the hand, develops at the point of inoculation. Rarely, this hyperemia is attended with some brawny induration, with enlargement and tenderness of the axillary lymph-nodes, but suppuration never occurs. The local reaction may or may not be accompanied by systemic disturbances. When present, systemic reaction may be manifested by slight pyrexia and malaise, in mild cases; and rheumatoid pains, nausea, rigors, considerable pyrexia, profuse perspiration, herpes, or nervous disturbances in the severer reactions. I have seen one case of hysteria follow inoculation. The symptoms subside within forty-eight hours in the severest reactions—usually within twenty-four hours—and the records of over 31,000 inoculations show no serious untoward results.

Laboratory researches demonstrate that the agglutinin, opsonin, and bacteriolysin of the blood-serum are increased by antityphoid vaccination and that the increase is greater and more persistent than that conferred by an attack of typhoid fever. Typhoid outbreaks, in commands in which there were both inoculated and uninoculated individuals, have demonstrated, practically, what we should have expected from the laboratory evidence; and a recent typhoid situation at Washington Barracks, D. C., illustrates the efficacy of antityphoid vaccination so conclusively that it is deemed worthy of record.

On June 14, ten days prior to leaving Washington Barracks for the Gettysburg maneuvers, 92 members of Company A, First Battalion of Engineers, received the first antityphoid inoculation. On July 6, 52 of the above men received the second inoculation, and on July 16, 51 of these received the third inoculation. Of the remaining 26 men of the command, a few refused vaccination and others were on detached duty or temporarily absent when the first inoculation was given.

Two of the 26 uninoculated men gave a history of having had typhoid fever, and by virtue of that fact may be considered immune. This leaves 24 men, of the total strength of 118 men, who had not acquired an immunity to typhoid fever by either preventive inoculation or a previous attack of the disease.

On August 11, five days after the troops returned from Gettysburg, two of the uninoculated men developed typhoid fever, and, between August 20 and 23, four secondary cases occurred—also among the uninoculated. Not a single case occurred among those who had received the preventive inoculations, while 25 per cent. of the non-immune, living under exactly the same conditions, succumbed to infection.

Such figures as these are eloquent in calling attention to the practical application of antityphoid vaccine in the prevention of typhoid fever. With no serious results following over 31,000 inoculations in the army, we may say with certainty that the procedure is safe, and statistics available at this time show that the immunity conferred by vaccination lasts for at least three years.

About one-seventh of the personnel of the regular army have now been vaccinated, and a regulation requiring the vaccination of all recruits and all those presenting themselves for re-enlistment would result, within three years, in a regular army practically immune to typhoid fever. Furthermore, in the event of hostilities, should the vaccination of the reserve army—militia and volunteers—be made compulsory before mobilization, it is reasonable to prophesy that the medical history of our land forces in past wars, as regards the incidence of typhoid fever, would not repeat itself.

Therapeutics

INDIGESTION

This condition, sometimes called the American disease, is certainly not growing less frequent, and its results are becoming more serious because the general system does not seem to withstand irritants so well as it did even 25 or 50 years ago. The human being of to-day with his higher civilization is subjected to a series of unceasing irritations—irritations to almost every sense and every part of the nervous system—which tend to cause nervous tension and increased circulatory-tension, and the results are arteriosclerosis and chronic nephritis. These two end-results are further caused and precipitated by the irritants that are absorbed from the alimentary tract. Normal digestion offers no such irritants; abnormal digestion, or indigestion, offers irritants which are more or less absorbed, which are for a long time tolerated, which are insidious in their results, and may for years cause no organic disturbances. There are, however, early and persistent symptoms of indigestion which the patient can recognize. Unfortunately, however, an adult for months may take no particular notice of disturbances that do not cause him distress.

There are so many causes of maldigestion that they could hardly all be enumerated in any one list. We may start out with the presumption that there is no organic trouble causing indigestion as a secondary condition. The first determination to be made when a patient complains of indigestion is that there is no circulatory or kidney excuse for the condition. The next determination should be as to whether the patient has simple indigestion *or* has *an inflammation of some part of the* digestive tract, and it is generally possible to decide whether simple dyspepsia or actual gastritis is present, or whether simple intestinal indigestion or an inflammation of some part of the intestinal canal is present. If it is determined that there is an inflammation of the mucous membrane, *i. e.*, gastritis, duodenitis, enteritis, or colitis, the treatment would be different than when there is simple disturbed digestion.

An acute inflammatory condition is readily recognized, and consequently correctly treated. A chronic inflammatory condition is not so readily determined, consequently more scientific examinations are necessary. The clinical history, signs, and an ordinary physical examination are not sufficient. The feces must be properly examined after a known diet.

Pediatricians for a long time have advised this method of determining the correct food for a given infant, and what he can digest. A few clinicians have long urged a more careful study of the stools of adults when there are disturbances of digestion, but the majority of practitioners take no notice of this aid in making a diagnosis and coming to a decision as to the proper food and proper treatment. It may readily be determined by such an examination of the feces which foods are best digested; whether the trouble is probably in the stomach or in the intestines; whether or not there is a deficiency of bile; whether or not there is an insufficient amount of pancreatic juice; whether there is a probable insufficient secretion from the intestinal walls and glands or not; whether peristalsis is delayed and the motility of the bowels sluggish; whether there is blood extravasated from some portion of the stomach and intestine; whether there is an abnormal amount of mucus; and last whether or not there is pus. Abnormality in the feces will give indications as to the etiology of the condition and the best line of treatment. If it seems probable that the a number show some alteration from the normal, the more conservative estimates placing this at 30 per cent. of all cases.

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Laboratory investigations have shown that 3 per cent. of those recovering from typhoid fever continue, indefinitely, to excrete typhoid bacilli capable of infecting others; and it must be conceded that, with these "carriers" acting as foci for the dissemination of the disease, "residual" typhoid will remain, despite the greatest sanitary vigilance. It is obvious, then, that some adjunct to the usual sanitary measures is necessary in an attempt to reduce still further the typhoid morbidity. Antityphoid vaccination seems to meet this necessity.

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It will be conceded by every practitioner that if any of the above-named abnormalities can be determined by examination of the feces, it is certainly advisable; the only drawback is the difficulty with which such a determination is made. In other words, if an easy, quick method of making such a scientific examination can be offered, it will be adopted by the general practitioner.

The following method is one that has been devised by Dr. M. M. Scarbrough, of New Haven, instructor in pharmacology at the Yale Medical School. The daily diet which he suggests that a patient should receive for three days before the examination of the feces is to be made is as follows: One quart of milk, one-fourth pound of bread, one-half pound of potato, one-fourth pound chopped beef. This represents about 100 grams of albumin, about 110 grams of fat, and about 200 grams of carbohydrate, amounting to about 2,225 calories in heat value, enough to meet the requirements of a man at light work. The following is the menu in detail:

Breakfast:—One soft boiled egg, 2 slices of toast with butter, 1 bowl of oat-meal with sugar and cream, 1 glass of milk, and 1 cup of coffee. If coffee is not desired, another glass of milk may be substituted.

Dinner:—A quarter pound of finely chopped round steak (very slightly broiled so that most of it is rare) ½ pound of mashed potato, 2 slices of white bread or toast, plenty of butter, and 1 or 2 glasses of milk.

Supper:—Same as the breakfast.

A patient is put rigidly on the above diet for three or four days. At the beginning of the diet he is given a tablet or capsule containing 0.30 gram (5 grains) of pure willow charcoal. This dose of charcoal is repeated at the end of the diet. The consequent black stools from these two doses of charcoal will mark the beginning and end of the period of special diet. The length of time it takes the charcoal to go through the intestines will determine their activity and whether the food is delayed or not in its passage through the alimentary tract. The second dose of charcoal is useful only to determine whether the activity of the canal has changed during the rigid diet. The stool which is to be taken for examination should be at the end of the third 24-hour period of the diet and before the administration of the second dose of charcoal. The stool desired is collected in a wide-mouthed jar and examined immediately, and the examination may be divided into macroscopic, microscopic and chemical.

Macroscopically, under normal conditions, we find a soft-formed stool, light-brown in color and of uniform consistency. A liquid stool usually denotes a too rapid passage of food through the tract; a tarry stool indicates blood coming from the stomach or high up in the intestine. Flakes of mucus, blood, pus, etc., are pathologic. Next a piece of feces the size of a walnut is ground up in a mortar with a little water and then spread out on a glass plate in a thin layer. The normal feces appear perfectly homogeneous except for here and there small broken, brownish points of cellulose from the oatmeal eaten. In this preparation may be seen food remains which are abnormal. Firm whitish or yellowish strings of connective tissue, and small brown-colored rods of muscle fiber, appearing like splinters of wood, may be seen here and there, denoting improper digestion of the meat. Starch granules in the form of glassy transparent globules like sago grains, may be present and must be distinguished from shiny, ragged flakes of mucus.

The microscopic examination, which is made to confirm the preceding, is very simple. A small mass of feces is pressed out in a thin layer on a slide by means of a cover-glass. Normal excrement from the test-diet appears as a fine detritus of granules, globules and bacteria, interspersed here and there with fragments of muscle fibers, small, irregular, yellowish flakes of calcium salts and less numerous skeletal remains of potato cells, besides the chaffy particles from the oatmeal. On a second slide a small piece of feces is stirred up with two drops of a 35 per cent. solution of acetic acid, heated over a flame until bubbles arise, and then set to cool. The process causes a liberation of the free fatty acids which flock out on the surface of the preparation, giving a rough index to the amount of fat in the stool.

It should be remembered that fat is a united compound of a fatty acid radical and glycerin. Under the action of pancreatic secretion the glycerin is separated from the fatty acid radical. Then, and not before the glycerin is so separated, can the bile act on the fatty acid radical to change it into a fatty acid that can be absorbed. Without the action of bile the original fat can not be absorbed, and the fatty acid resulting from the breaking up of the fat from the action of the pancreatic juice also can not be absorbed. In the presence of potassium or sodium the fatty acid can be converted by means of the bile into a soap. It will thus be seen that, either from imperfect pancreatic juice or from imperfect bile, fat may not be absorbed, and will appear in the stools as such. If the pancreatic juice acts normally on a fatty food and the bile is not secreted or does not act, then crystals of fatty acids and perhaps soaps will appear in the feces.

On a third slide an iodin solution (liquor iodi compositus, Lugol's solution, diluted with equal part of water) is used, which stains the starch, yeast and other fungi that may be present. The microscopic examination may reveal the following pathologic components: fragments of muscle fibers large in size and in good state of preservation; clusters of undigested starch grains; numerous needles and crystals of fatty acids and soaps; and occasionally various fungi.

The chemical tests are very simple. The litmus reaction is taken; normal stools are faintly alkaline or at least feebly acid. Next a little of the stool is mixed with a strong bichlorid solution (a saturated solution of corrosive sublimate in water, which is, in cold water, not far from 7 per cent.); normal feces give a red reaction, while feces that have passed through the tract so rapidly that the bile has not been reduced give a greenish reaction. The bile should be digested in the intestine, if present; consequently the greenish color is abnormal and shows that undigested bile pigments have passed entirely through the intestinal tract. The last test is the amount of gas that the stool will give off. If there is produced a large amount of gas and the feces become acid it usually indicates an excess of carbohydrates in the stool; if there is produced a moderate amount of gas and the stool becomes alkaline and foul it usually indicates an excess of protein in the stool. The normal feces should produce only a small amount of gas with only slight change in reaction. An accurate gas determination can only be made after a portion of the feces has stood for 24 hours in a bottle so that the gas given off from the bacterial action in the fecal material, without the addition of any substance, may be collected and measured. This determination, therefore, takes time, requires a properly graduated and constructed bottle for the gas determination, and is hardly practical for the rapid clinical examination of the feces which is being described.

The significance of pathologic findings may now be briefly rehearsed. Mucus in the stool means the existence of an inflammatory condition of the mucous membrane. Almost always it comes from the large intestine or rectum. The mucus from the stomach and small intestine is dissolved by the digestive fluids unless the passage through the canal is very rapid. Unchanged bile pigment, as detected by the bichlorid test, indicates a very rapid passage of intestinal contents; absence of bile pigment denotes complete obstruction of the biliary duct. Excess of fat in the stool may be due to its incomplete digestion on account of a diminished amount of bile, or to a disturbance of the pancreatic secretion.

The finding of meat remains is of great significance. Connective tissue never appears in the feces after the test diet unless there is a disturbance of digestion in the stomach, a diminished gastric juice. The trouble once located in the stomach can be further studied by the well-known methods of gastric analysis. The other structures of the meat (the muscle fibers) are not digested in the stomach. Even in complete achylia gastrica muscle fragments never appear in the stool. The presence of muscle fibers in a good state of preservation always means trouble in the small intestine, due to one or more of the following conditions: the pancreatic juice may be insufficient; or the active enterokinase of the secretions of the small intestine may be absent; or, finally, there may be a marked hypermotility, too rapid peristalsis, of the small intestine, thus not allowing time for digestion of these elements. A method for the investigation of the exact cause of intestinal indigestion of meat fibers has not yet been satisfactorily worked out. However, as the nuclei of tissue cells are digested only by the pancreatic secretion, Schmidt has devised his nuclei test, which consists in giving a small cube of meat placed in a small porous silk bag. The bag almost always contains remains of the tissue after passing through the gastrointestinal tract. If undigested nuclei are present, it is safe to conclude that there is an unsatisfactory functioning of the pancreas.

The presence of starch elements indicates its incomplete digestion in the small intestine and shows a disturbance of the pancreatic secretion and of the intestinal juice. Insufficiency of starch digestion is further confirmed by the fermentation test and by the finding in the stool of organisms that stain blue or violet with iodin.

It seems to be a fact that when there is constipation in individuals otherwise well, that there are but few food fragments in the feces. Even the cellulose of the potato cells and of oatmeal disappear. This probably means that the longer time that these food products remain in the intestine, the more complete is the digestion. In such instances of constipation with otherwise good health there is often but little gas or fermentation discovered by examination of the feces. Constipation in such individuals is due to the too complete absorption of the liquid portion of the intestinal contents and such a complete digestion of food products as to inhibit the development of normal bacteria. Consequently, there is less gas and less liquid and the normal stimuli to peristalsis are absent. This form of constipation is generally improved by the agar-agar treatment. Agar-agar can be obtained in granulated form, and may be eaten in the morning with cream and sugar, similar to a cereal, and even bread may be made of agar-agar. Ordinary gelatin is also of advantage in this kind of constipation; also are ripe bananas. The action of these food products is mechanical; they absorb water, retain it, prevent the fecal debris from becoming dry, and give a larger bulk for normal peristalsis.

The absence or diminution of bile coloring matter in the stools of course points to deficient liver activity or to some obstruction to the bile ducts. If there is a large amount of mucus in the fecal matters, and if there are shreds of membrane or actual pus, it shows an abnormally increased secretion of mucus or an actual inflammation in some part of the alimentary canal. If there is much mucus or mucopus in the stools, it is generally due to catarrh of the large intestine. Such a condition generally gives frequent small bowel movements.

To a small portion of feces in a test tube add three drops of freshly made tincture of guaiac, then add a layer of half an inch, or so, of peroxid of hydrogen solution. If blood is present, there will be a ring of blue form between the peroxid solution and the fecal solution. If this is thoroughly shaken, of course the whole of the peroxid solution becomes blue if blood is present. This is a test for occult blood, *i. e.*, hidden or digested blood. Blood in large amount, or if evident macroscopically, requires no such test. The diagnostic findings and the indications for treatment may be summed up as follows:

1. If the charcoal is slow in passing through the alimentary canal, *i. e.*, more than thirty-six hours after ingestion, intestinal peristalsis is sluggish.
2. If the fecal matters are very dry, there is too great absorption of liquid from the intestines.
3. If the stools are very liquid, there is generally too rapid peristalsis.
4. If the fecal matters are distinctly or very acid, there is an imperfect intestinal digestion.
5. If there is much gas in the feces, there is maldigestion of some kind; it may be purin maldigestion or carbohydrate maldigestion. Whichever it is otherwise determined that it is, that particular kind of food should be limited.
6. If there is undigested connective tissue found microscopically, the trouble lies in the stomach, which should then be studied by means of the test breakfast and examination of the stomach contents withdrawn an hour after the test breakfast has been taken. If there are undigested muscle fibers present, there is insufficient pancreatic secretion, and meat should be diminished or temporarily withdrawn from the diet.
7. If there is a large amount of undigested starch particles, the pancreatic juice is deficient, at least in its starch digestion properties; consequently the starch in the diet should be diminished.
8. If the bile pigments are absent, of course the bile is not secreted (or excreted) into the alimentary tract. If there is a large amount of bubbling from the liberation of fatty acids during the acetic acid test, or if there is a large amount of fat in the stool, it would show deficient bile secretion, and the amount of fat ingested should be greatly diminished.
9. Abnormal bacteria, or an abnormal amount of bacteria, or specific bacteria would suggest various diets, bowel antiseptics, purgings, and various systemic treatments, depending on the findings.
10. Much mucus or pus would suggest the treatment, depending on the region from which it was supposed to come; colon washings or colon treatments, if the colon was at fault.
11. If there is blood in the stool, evident or occult, it must be determined, if possible, from what part of the tract it comes.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, NOVEMBER 19, 1910

FLIES AND TYPHOID FEVER

It is sometimes easier to implant a new idea in the human mind than to extract it or modify it when it has once taken firm root. The notion that bad smells from faulty sewers give rise to specific infections such as diphtheria and typhoid fever, or that piles of garbage "breed disease" are cases in point. In the public mind methods of garbage disposal and elaborate plumbing ordinances often loom large as the chief weapons of combating disease. Too often attention is diverted from *really significant* and tangible dangers to health by the cry that the garbage dump or the sewage manhole is emitting vile odors. It is of course well known to physicians that there is no evidence that disease can be spread by odors, although foul air may possibly impair health and render the body less resistant to disease.

Many sanitarians are beginning to fear that a similar misapplication or misunderstanding of the relation of the house-fly to typhoid fever is coming about. No one questions that the house-fly is an unmitigated nuisance. Neither is there any doubt that under certain conditions such as prevail in military or mining camps or on many a country farm, or even in cities that allow the crude type of privy, the house-fly is an exceedingly important agent in the transmission of infection. This has been abundantly proved. There is observable, however, a tendency to assume a connection much wider than this and to attribute to fly infection a portion, sometimes the major portion, of the typhoid fever occurring in large and well-sewered cities. Several instances of this misguided enthusiasm have come to notice within the last few months. It need hardly be pointed out that the house-fly, no matter how disgusting its origin or habits, cannot convey the specific germ of typhoid fever to any food substance unless it has access both to food substance and to typhoid germ. Those amateur investigators who assume that they have discovered the origin of a typhoid epidemic if they observe a few piles of horse-manure in the alleys of a city take a wide leap over logical difficulties. Their mode of reasoning seems to be this: Flies can breed in horse dung, flies can convey typhoid fever, therefore flies bred in these dungheaps have caused or are about to cause typhoid fever. One other essential condition, namely, the existence of infected material to which the flies have access, is left out of account in such hasty judgments. As a matter of fact, grave as is the danger of fly transmission of typhoid under rural conditions, it does not seem to be an important factor in the production of urban typhoid. As is well known, the intensive study of typhoid fever in Washington, D. C., which extended over several years, yielded no evidence that fly-transmission had any noteworthy share in typhoid fever causation in that city.

One of the most experienced American health officers has taken a decided stand on this question in a book recently published.[1] While recognizing the desirability of treating garbage in such a way as to prevent a nuisance, and admitting the possibility of fly-borne infection where open privy vaults exist, he declares very plainly that "there is no evidence that in the average city the house-fly is a factor of great moment in the dissemination of disease." There can be no doubt that in any reasonably clean and well-sewered city the cases of typhoid infection due to direct fly transmission are relatively very few compared with the number due to water, to milk and to contact (including contact with carriers). As one writer has said in discussing this question "we need more scientific knowledge and less repetitious babble of sentiment in dealing with flies or any other nuisance."

SUNLIGHT, BAREHEADEDNESS AND BALDNESS

Recently we called attention to the observations of Grawitz[2] that too much indulgence in sun baths is prejudicial to the human organism and causes irritability and nervousness, cardiac and circulatory disturbances, and more or less serious dermal lesions. Recent observations confirm these findings and show that the skin and its appendages are peculiarly susceptible to the sun's rays.

During the past few summers there has been a wide-spread and growing tendency among young people to discard head coverings of all kinds, and to go about under the open sun bareheaded. Indeed in college communities, the bare-head habit has not been limited to summer, and it has apparently been considered modish to go about hatless in weather which caused older and less faddish heads to seek the shelter of furs and ear muffs. This custom has received not a little encouragement from the wide-spread belief, which is probably well warranted, that baldness is commonly caused by the obstruction to the circulation of the scalp by the pressure of hat-bands; therefore to escape this unwholesome pressure and at the same time to secure the stimulating effects of sunlight seemed an ideal method for insuring a permanent and luxuriant head of hair.

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[1] Chapin, Charles V.: Sources and Modes of Infection, New York, 1910.

[2] THE JOURNAL, Aug. 6, 1910, p. 506.

That the results of the habit are not always so favorable, but often quite the reverse, was pointed out at the meeting of the American Dermatological Association in Boston by Dr. George F. Harding and others.[2] Dr. Harding said that his deductions from the observation of 312 cases of alopecia in young people between the ages of twelve and twenty years, would indicate that exposure to the sun was harmful rather than beneficial to the hair and scalp. The alopecia affected chiefly blonds (293 of the 312 cases), presumably because of the finer texture and lack of pigmentary protection, and when following a single season's exposure showed itself from four to six weeks after the return of the patients from seaside or country to the city. If the custom is persisted in for several seasons the baldness becomes marked and the prognosis unfavorable. Other dermatologists concurred in this unfavorable opinion of the influence of direct sunlight on the scalp, and pointed out the similarity of the effects of the highly actinic rays of the sun and the *x*-rays, whose depilatory powers are well recognized and often used.

The time was when we thought that man could not possibly get too much sunlight, but we are learning, especially through our friends in the tropics, that for the white man at least the limit of advantageous exposure to the sun is quickly reached. It is all a question of dosage, and those who would go back to Nature and the bare-headed state of man must be warned of the necessity of moderation even in this simple indulgence.

MEDICAL RESEARCH AND MEDICAL EDUCATION

Elsewhere in this issue comment is made on a recent gift to a medical teaching institution, for the encouragement of medical research. This aid to the investigation of new problems is gratifying. Through medical research the known facts connected with medicine have increased to an enormous extent, and many practical methods of prevention, diagnosis and treatment of disease have been evolved. The good work is still going on. But it should not stop here. For while it is impossible to give too much financial encouragement to medical research, still it is to be regretted that the importance of encouraging a higher standard of medical education is not being appreciated to a like extent. It does not seem to be realized that this newer knowledge in medicine is of little worth unless it be practically applied by physicians, and that its vast importance requires of them far broader knowledge, and therefore a much higher standard of education than was necessary before the recent remarkable development of scientific medicine.

Medical progress has been so rapid that medical schools have found difficulty in keeping pace with it. The leading schools have been striving to provide a course that would meet the requirements. The medical course has been extended from two years of six or seven months each to four years of eight or nine months each. Such subjects as bacteriology, pathology, physiologic chemistry, pharmacology, etc., hardly thought of a little while ago, have become fundamental and essential.

And so it has developed that to teach modern medicine requires the college to provide extensively equipped laboratories and to employ specially trained teachers with salaries that will permit them to devote their entire time to the work. But this means an enormous additional expense—so enormous that many teaching institutions have been unable to meet it.

Again, the modern medical course requires that the students who enter, in order to master the newer subjects, must have a much broader preliminary training than was formerly necessary. And this deters many who would otherwise enter on the study of medicine.

On the one hand, therefore, the medical school is put to an enormously increased expense; while on the other hand, by the prolonged medical course and by exacting higher entrance requirements, the number of students who can meet the requirements has been greatly reduced. Hence it has become financially impossible for a medical school dependent solely on students' fees to teach modern medicine as it should be taught. Medical schools to-day simply must have outside support, either by private endowment or by state aid.

It is to be hoped, therefore, that the recent generous gifts for medical research merely foreshadow equally generous gifts for medical education, so that the knowledge that results from medical research may be practically applied in the prevention of sickness and in the treatment of disease. No investment will bring greater returns in the extension of health and happiness than financial support given to those medical schools which are honestly and unselfishly striving to educate men for the practice of modern medicine.

Current Comment

MEDICAL EXPERT TESTIMONY

Medical expert testimony is a puzzling problem for physicians, lawyers and judges. It has been repeatedly discussed at various medical meetings, at the annual sessions of the National Legislative Council of the American Medical Association and at the meetings of the American Bar Association. An effort is now being made in Missouri to secure some tangible results, through cooperation between the State Medical Association and the Missouri Bar Association. A joint committee representing both of these bodies has drafted a proposed law with a view to improving the status of expert medical testimony in the courts. The bill, if passed, will empower any judge of any court of record, on his own motion or on that of either party in the case, when the ends of justice seem to require it, to appoint one or more disinterested, skilled persons to serve as expert witnesses, the fees of such witnesses to be fixed by the judge and to be paid by the party asking for the appointment of such experts. In criminal cases, on the request of the defendant, expert witnesses may be furnished at the expense of the state. The bill provides that these witnesses shall examine such persons, matters or things as the court shall direct, and report their findings in writing, not as evidence, but as a basis for their examination by the court or by counsel for either party. They will not be regarded as witnesses for either party. In personal injury suits, the judge may require the person alleged as injured to submit to a reasonable examination, physical or mental, by the experts so appointed. There are at present only two states which have enacted an expert testimony law, Michigan and Rhode Island. No one will deny that the present condition of medical expert testimony is most unsatisfactory. The solution of the problem will require the united efforts of both the medical and legal professions. Neither alone can solve it. The recognition of this fact by the Missouri State Medical Association, and the effort to cooperate with the State Bar Association are steps in the right direction.

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[2] Boston Med. and Surg. Jour., 1910, clxiii, 478. White, C. J.: THE JOURNAL, Sept. 24, 1910, p. 1074.

THE CHICAGO CLINICAL MEETING

A series of surgical clinics, carefully planned and covering two weeks, has just terminated in Chicago. In an item in the news department appears the statement that perhaps 1,000 surgeons from outside the city have attended these clinics. This remarkable showing clearly demonstrates three things: first, that physicians are to-day more anxious than ever to fit themselves for better work and are willing to spend time and money for that purpose; second, that owing to multiplication of societies and meetings, the writing and reading of papers have been relatively overdone and that fewer and better meetings with fewer, shorter and better papers and more clinics should be the aim; third, that the medical profession of Chicago to-day faces an almost unprecedented opportunity to make that city one of the greatest medical educational centers of the country.

INTERSTATE COMMERCE IN MEDICAL SERVICES

The power of the state to regulate the practice of medicine through the exercise of its police power has been repeatedly stated and emphasized. As the practice of medicine is ordinarily a local function, it has been generally assumed that state regulation is sufficient. A case has recently come to light, however, which shows that in regulating the practice of medicine, as in regulating railroads and express companies, there must be something additional and supplementary to state regulation, if the public is to be protected. In the case referred to, an individual residing in one of our larger cities, who is not licensed and who cannot obtain a license to practice medicine in the state in which he lives, has been doing an extensive business by mail with "patients" located in other states; he has been treating their ailments and prescribing for them by mail, regardless of the fact that he was not legally qualified to practice medicine either in the state in which he lives or in the various states in which his "patients" live. It is apparently difficult if not impossible to indict him in either state. Under existing federal laws, he can, if proven guilty, be punished for using the United States mails for fraudulent purposes, but he cannot be arraigned in a federal court for practicing medicine illegally, since there is no federal enactment regulating the interstate practice of medicine. It is a legal axiom in this country that the power of the federal government begins where the power of the state ends. It seems clear that there should be some way of preventing a citizen of one state from performing any act in another state which he could not legally do in the state in which he resides.

ANOTHER GIFT FOR MEDICAL RESEARCH

Medical research has received much encouragement of late through generous donations from men of wealth. Every week or two announcements are made of large gifts for the endowing of this important work. The latest instance is the gift of $200,000 from Mr. James A. Patten to endow a chair of medical research at the Northwestern University Medical School, Chicago. The chief object of this gift is the investigation of tuberculosis, a brother of the donor having recently died of this disease. By a wise provision, however, the fund will not be limited to this particular work but will be used in any field which promises results in preventive medicine and in the treatment of disease. The gift is considered adequate to secure the services of a skilled investigator and to initiate the work, although further funds will doubtless be available as the work proceeds.

CHINESE HAIR AND AMERICAN RATS

The British Consul at Swatow, China, reports that Chinese exports of human hair have nearly doubled in value, the cause being the change in style of ladies' hairdressing in America and Europe. The Chinese have not been slow to take advantage of this sudden development of the business. The consul states that all classes of natives have invested money in the business, and that the poor have found a paying occupation in collecting combings and preparing them for the market. In view of the alleged fondness of some Chinese for rats, one could almost construct a joke out of this exportation of hair for "rats" for American and European women.

THE PLAGUE IN ENGLAND

Mention is made by our London correspondent in this issue of the occurrence of a number of cases of what was supposed to be pneumonic plague. According to the Local Government Board,[1] there occurred four deaths at Freston in Suffolk, which, it was believed, could be ascribed to plague of the pneumonic type. A bacteriologic examination of material taken from two of the patients apparently confirmed the clinical diagnosis. Subsequently, rats and hares found dead or dying in the same locality were examined, and found to be infected with plague. As result of these findings, a very systematic effort was inaugurated to destroy rats and remove accumulations of refuse. The result has been a most satisfactory one, no cases of human illness suspicious of plague having occurred since the latter part of September. Fortunately, public apprehension was not aroused by these deaths; in fact, little opportunity was given the public to become frightened. The local health authorities proceeded with the work of prevention so quickly and so admirably that all danger of spread of the contagion had passed before the presence of the plague became generally known. This certainly was most desirable, inasmuch as it left the authorities unhampered in their endeavor to check the contagion.

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[1] The Mysterious Disease in Suffolk, Lancet, London, Oct. 29, 1910, p. 1295.

ROSES INSTEAD OF TAGS

We are becoming accustomed to the use of the little stamps sold at Christmas time, the proceeds of which go to aid in the eradication of tuberculosis. In many of our cities "tag day" has become an established institution as a means of raising money for local charities. These methods of raising funds for worthy causes have been accepted by the public to such an extent that on a recent "tag day" in one of our large cities, it was practically impossible by evening to find any one on the down-town streets who did not wear a little pasteboard tag as an evidence of contribution to the designated charities. While our methods are effective so far as results are concerned, our European neighbors have evidently improved on the American plan, from an esthetic standpoint. Laurence Sterne observed, long ago, in another connection, that "they do these things better in France." Evidently, Belgium has profited by intercourse with her artistic neighbor. A dispatch from Brussels states that the fight against tuberculosis in that country is aided by a "rose day," on which occasion the *rose de la reine* is the decoration which everyone is expected to wear. Sunday, the queen's day, is designated as rose day and hundreds of thousands of little roses, sold for the benefit of the Oeuvre contre la Tuberculose, are seen in buttonholes and on dresses and hats. One of the three rose bazaars in Brussels sold this year over 150,000 roses and would have sold more had it been possible to secure them. This plan of raising funds for a worthy object is practically the same as ours, but the substitution of the rose for the pasteboard tag is a beautiful improvement which is commended to our charity workers for consideration.

Medical News

COLORADO

Gifts to Hospitals.—The National Jewish Hospital for Consumptives and the Jewish Relief Society for Consumptives each received a gift of $1,000 from Louis J. Aaron, Pittsburg, Pa.

New Building for Physicians.—The new Metropolitan Building, Sixteenth Street and Court Place, which has been adopted for the permanent home of the Denver City and County Society, is ready for occupancy. About 100 physicians and dentists have moved or are moving into the building. The building will also contain the library of the society and a lecture room.

Personal.—Dr. Eleanor Lawney, Denver, has been elected president of the board of directors of the Visiting Nurses' Association.——Dr. John R. Robinson, Colorado Springs, who was operated on for appendicitis, is reported to be improving.——Dr. John W. Webb, Denver, on trial for the murder of Mrs. Georgia Slaughter Erby, for an alleged illegal operation, was found not guilty by the jury, November 4.

CONNECTICUT

Personal.—Dr. John E. Farrell, Waterbury, announces that he will hereafter limit his practice to the treatment of diseases of children.

Health Board Needs.—The Board of Public Health of Waterbury has asked for an appropriation of $11,710 for its 1911 expenses, an increase over the appropriation for this year of $5,210. The estimated expense of garbage removal for the year is $23,000.

Gifts to Medical Society and Hospital.—By the will of Mrs. Mary Bacon, widow of Dr. William T. Bacon, Hartford, $100,000 is devised to the Hartford Medical Society, and $5,000 to the Hartford Hospital to provide for a free bed for patients suffering from diseases of the eye or ear.

GEORGIA

Wish New Hospital for Rome.—Several physicians of Rome appeared before the city council recently, and offered to erect a city hospital to cost $50,000, provided the city would provide for the maintenance of the institution.

Entrance Requirements.—Entrance requirements to medical colleges was an interesting part of the program of the Association of Colleges and Preparatory Schools of the Southern States which held its sixteenth annual meeting at the University of Georgia, Athens, November 3 to 5. Papers on immediate and ultimate standards of preliminary education for admission to medical schools were presented by Dr. Richard H. Whitehead, dean of the Medical Department of the University of Virginia and Dr. Nathan P. Colwell, secretary of the Council on Medical Education of the American Medical Association. A number of physicians were present including Dr. Alfred L. Gray and Dr. J. Allison Hodges of the University College of Medicine, Richmond, Va., who participated in the discussion.

Personal.—Dr. John H. Phillips, Oakhurst, Atlanta, who was arraigned November 1, charged with violating the contagious disease ordinance by tearing down a diphtheria card from a house, is said to have been found guilty, and fined $25 and costs.——In the case of George Williamson, a farmer near Butler, who sued Dr. Wanzie W. Edwards, for alleged malicious malpractice, the jury, after being out fifteen minutes, brought in a verdict in favor of Dr. Edwards.——Dr. Leo Reich has been appointed lecturer on diseases of the skin in the Medical College of Georgia, Augusta, and also consulting physician to the Children's Hospital.——Dr. J. Scott Todd, Atlanta, who underwent operation in St. Joseph's Infirmary recently is reported to be doing well.——Dr. William H. Doughty has succeeded Dr. Joseph E. Allen as dean of the Medical College of Georgia, Augusta.——Dr. William J. McNaughton, Covena, Swainsboro, charged with the murder of Fred Flanders, is said to have been found guilty and sentenced to be hanged December 9. A motion for a new trial has been filed.

ILLINOIS

Personal.—Dr. Harold D. Singer, Hospital, has sailed for England.——Dr. Joseph De Silva and Albert N. Mueller have been appointed trustees of the Rock Island Municipal Tuberculosis Hospital.——Dr. Sumner M. Miller has been elected president of the medical staff of Deaconess Hospital, Peoria.

State Board Decisions.—The Illinois State Board of Health at its last meeting again declared the St. Louis College of Physicians and Surgeons not in good standing.——On November 3, the superior court of Cook County dismissed the personal damage suit brought by the National Medical University against the State Board of Health for its action in declaring the National Medical University not in good standing. The plaintiff appealed to the appellate court.

Illinois Physicians' Meeting.—The Aesculapian Society of the Wabash Valley held its sixty-fourth annual meeting in Paris, October 27, and elected the following officers: president, Dr. Finis E. Bell, Mattoon; vice-president, Dr. H. P. Canatta, Vernon; secretary-treasurer, Dr. Herbert N. Rafferty, Robinson, and censors, Drs. Albert T. Summers, Mattoon, Frank Dunham, Robinson, Myron A. Boor, Terre Haute, Ind., William H. Ten Broeck, Paris, and Stephen C. Glidden, Danville. The next semi-annual meeting will be held in Danville in April.——

The annual meeting of the Western Medical Society of Illinois was held in Alton, October 28. The following officers were elected: Dr. N. Gerhard Taphorn, Alton, president; Drs. Levin H. A. Nickerson, Quincy, and Elmer L Crouch, Jacksonville, vice-presidents, and Dr. William P. Duncan, Jacksonville, secretary-treasurer.——The Illinois State Hospital Medical Association was organized in Chicago, October 27. Dr. Harold D. Singer, director of the Psychopathic Institute at the Kankakee State Hospital, was elected president, and Dr. Edward A. Foley, of the Anna State Hospital, secretary.——The Southern Illinois Medical Association held its annual meeting in Centralia, November 3 and 4, and selected Mount Vernon as its place of meeting for next year. The following officers were elected: president, Dr. Edward W. Fiegenbaum, Edwardsville, vice-presidents, Drs. Andy Hall, Mount Vernon, and Harry E. Wilson, Centralia; secretary, Dr. Charles W. Lillie, East St. Louis; assistant secretary, Dr. Harry W. Dale, McLeansboro, and treasurer, Dr Alexis T. Telford, Olney.——At the ninety first annual meeting of the Fox River Valley Medical Association, held in Aurora, November 8, the following officers were elected: president, Dr. Charles H. Franz, Aurora; vice president, Dr. Dwight E. Burlingame, Elgin; secretary-treasurer, Dr. William H. Schwingel, Aurora; censors, Drs. James A. Rutledge, Elgin, William P. Sherman, Aurora, and George W. Haan, Aurora; delegate to the Illinois State Medical Society, Dr George F. Allen, Aurora, and alternate, Dr. Frank H. Jenks, Elgin.

Chicago

Higher Entrance Requirements.—The dean of Northwestern University Medical School announces that hereafter the institution will require two years of collegiate work as requisite for admission instead of one year as heretofore.

Physician Shot.—Dr. Jacques Holinger, a specialist in diseases of the throat, while in his office November 9, was seriously wounded by a patient, who shot him three times, once through the nose and twice through the arm. The patient then killed himself. Dr. Holinger is progressing favorably.

Plan for Open Air Schools.—Members of the Chicago Permanent School Extension Committee, composed of delegates of ninety women's clubs of Cook County passed resolutions at its meeting, held in Chicago, October 29, to begin the systematic work of introducing open-air school rooms in as many Chicago schools as possible. The committee furthermore decided to raise funds to defray the expenses of providing the supplementary food and clothing for the children who are to be given the open-air instruction and treatment.

The Clinical Convention.—Chicago's medical population has been temporarily increased by nearly 1,000 physicians from all over the country who have been in attendance on the series of clinics held by the surgeons of Chicago in most of the hospitals, colleges and postgraduate schools. In connection with the clinics, special meetings of the various medical societies of the city are being held, at which many eminent surgeons from outside of Chicago are appearing on the programs. The occasion has furnished many practitioners the opportunity to refresh their knowledge of the details of many operations One valuable feature has been a series of reviews of "borderland surgery," in which were discussed the differential diagnoses of many conditions in which it is often difficult to determine whether or not operation should be performed Some of the prominent subjects taken up have been repair of intestinal wounds, grafting and transplanting, blood-vessel anastomosis (on which an article appears in this issue of The Journal), correction of results of infantile paralysis, removal of goiter, Cesarean section, wiring of fractures, etc. To give a list of those who have held clinics and assisted in them would be almost to give a catalogue of the active professors of surgery, hospital surgical staffs, etc., of the city, so general has been the cooperation, while a list of the subjects covered would rival the table of contents of an up to date treatise on surgery. Dr. Franklin H. Martin and those who have assisted him are being warmly congratulated on the success of the clinics. Some of those who were most optimistic in advance have been surprised to see how generally the plan has been taken up and carried through. Medical men have come from the Atlantic Coast and the Pacific States, from the South and from the North. One pleasant feature made possible by the presence here of many prominent surgeons from other cities has been the banquets, receptions and smokers given in their honor

INDIANA

Indianapolis to Open School for Defectives.—The City Board of Health of Indianapolis expects to open a school for defectives and to segregate all children whose eyesight or hearing may be impaired or who are mentally incapable of keeping pace with the brighter pupils.

Young Physicians Meet.—The Younger Physicians' Club of Indianapolis, which met October 28, reelected the following officers president, Dr. Alfred Henry; vice-president, Dr. Harrison S. Thurston, and secretary-treasurer, Dr. John H. Eberwein This is said to be the only social medical society in Indiana and holds five meetings a year, and at each a special talk is given on a subject relating to medical science, followed by vaudeville and smoker.

Personal.—Drs. Daniel S. Quickel and B. H. Reed, Anderson, were painfully injured in an automobile accident, November 2——The office of Dr. George W. Brown, Frankfort, was damaged by fire November 9.——Dr. Jesse M. Jones, Cataract, suffered a cerebral hemorrhage recently.——Dr. Joseph R. Whalen, Carlisle, is reported to be critically ill with cerebral hemorrhage.——Dr. Lewis N. Davis, Farmland, was painfully injured by the explosion of a medicine bottle, November 6.

Communicable Diseases.—Infantile paralysis has been reported from a number of cities in the state. Logansport alone has more than a dozen cases, and strict sanitary precautions have been taken to prevent an epidemic. Recent analysis of the city water supply shows a large number of colon bacilli. The city health authorities are progressive and are endeavoring to stamp out both scarlet fever and diphtheria, which have lately appeared in epidemic form. Notice has been served on the school board and city council that unless another high school building be secured within thirty days, the present school will be closed. The board of health has stopped two "rummage" sales which were believed to spread infection. Hereafter all clothing at "rummage" sales must be previously sterilized.

Health Clubs to be Organized.—Under the patronage of Dr. John N. Hurty, secretary of the State Board of Health, health clubs are being organized throughout the state. The first was organized at Brazil with a membership of thirty. The clubs devote much of their time to the study of hygiene, and to giving assistance to state and local health authorities in the enforcement of public health laws. Health days are planned to be held once or twice each year, in each of the public schools, and on these days teachers will be asked to address the students on hygiene and sanitation and the necessity of keeping back yards and alleys clean. Health weeks are to be held throughout the state, commencing in Warsaw, following which the different county seats will be visited. The state board will place specimens and charts on exhibition and give addresses on the manner of the prevention of diseases, more particularly tuberculosis. Dr William F. King, Columbia City is in charge of the work The first rural medical and dental inspection of schools was taken November 3 around Princetown, Ind Medical inspection has been so successful in cities that school patrons in the rural districts have petitioned for it.

KENTUCKY

Tuberculosis Cottage Built by Fraternal Order.—A completely equipped shack for the treatment of tuberculosis is to be erected on the grounds of the Hazelwood Sanatorium by the Louisville lodge of Elks, to cost about $4,000.

Reverses Order of Board of Health.—Governor Willson is said to have ordered that a license be granted to Dr. Frank A. Clark, Newport, who was refused a license to practice medicine by the State Board of Health, because, under the law, the school from which Dr. Clark was graduated is not recognized An appeal was taken to the governor.

Personal.—Dr. Isadore N. Bloom has been elected a school commissioner of Louisville——Dr. John D. Jackson, Danville, has decided to retire and will eventually locate in southern California——Dr. George P. Beutel, Jr., Louisville, has returned from abroad——Dr. W. Ed. Grant, health officer of Louisville, has gone to Pass Christian, Miss., for a month on account of his health.

New Hospital.—The vote in Louisville for the hospital bond proposition received more than the necessary two thirds vote Bonds for $1,000,000 will be issued by the Hospital Commission and active work will be begun for the plans at once. The hospital building will be torn down, the sick of the city being cared for in private institutions, and the new hospital will be erected on the present site The validity of the vote for the bond issue is to be tested by the courts by a friendly suit.

Tuberculosis Dispensary Busy.—There are at present 300 patients under the care of the dispensary of the Louisville Anti-tuberculosis Association, and it is estimated that there are 2,500 cases of tuberculosis in the city. New cases are being enrolled at the dispensary at the rate of 900 a year. Of the six nurses now on duty, one is at the tuberculosis Day Camp, the tuberculosis annex of the City Hospital; one is giving a course of lectures in the public schools of the city, and one follows up all deaths to see to the fumigation of the premises and to secure for the vital statistics bureau of the health department such sociologic information as is required. More than 1,000 visits monthly are made by the nurses.

Fireworks Ordinance.—At the last meeting of the Louisville General Council an ordinance was introduced prohibiting the sale of giant firecrackers, toy pistols, blank cartridges, explosive canes, ammunition for the canes and all explosives containing chlorate of potash, and providing as a penalty for violation thereof a fine of any sum up to $100 and a jail sentence up to thirty days, or both, at the discretion of the judge. The author of the ordinance stated that this committee had conferred with all the prominent dealers in fireworks in the city and that they were in favor of the passage of the ordinance. One councilman, in opposing the ordinance, said in substance that he was in favor of giving the small boy all the opportunity he desired to celebrate the patriotic holidays as he might please. He admitted that there had been a deplorable loss of life throughout the country in the hands of celebrators, but he tried to argue that such results were necessary to the greater good of instilling patriotism in the hearts of the American youth and giving him the knowledge of firearms and explosives. The measure passed by a vote of fourteen to six, and then was referred to the upper board and by that board to the cemeteries committee.

MARYLAND

Anti-Spitting Ordinance Passed.—The city council of Lonaconing has passed an anti-spitting ordinance with penalty of a fine of $1 to $10 or imprisonment not to exceed fifteen days.

Medical Society Election.—Washington County Medical Society, at its annual meeting, November 10, elected the following officers: Dr. William A. Quinn, Chewsville, president; Dr. J. Royer Laughlin, Hagerstown, vice-president; Dr. Samuel M. Wagaman, Hagerstown, secretary, and Dr. Luther H. Keller, Hagerstown, censor.

Baltimore

Founds Medical Scholarship.—Dr. J. Randolph Winslow has given $2,500 to found a medical scholarship at the University of Maryland, to be conferred on some worthy student of the second, third, or fourth year class.

Abbott Lectures.—Prof. Alexander C. Abbott, of the University of Pennsylvania, delivered two lectures at the University of Maryland, November 9 and 10, on "The Functions of the Municipality in Public Preventive Medicine" and "Interdependence Between the Laboratory and the Clinical Investigators."

NEW YORK

Annual Reports Issued.—The annual reports of the president and treasurer of Cornell University were issued November 12. In it President Schurman presents in his forceful way the various problems of research, the teacher, the student, the curriculum and university finances.

Another Tuberculosis Sanitarium.—At a recent meeting of the Poughkeepsie Academy of Medicine resolutions were adopted indorsing the action of the Board of Health of the city of Poughkeepsie in making a move to establish a tuberculosis hospital on the Pendell farm. Dr. Alva L. Peckham was elected president of the institution.

Increase in Insanity.—According to the report of the State Lunacy Commission, the number of insane in the state in hospitals has increased during the past twenty years from 16.006 to 32,650. In recent years the annual increase has been about 1,200 patients. The commission states that the rate to persons paying for the care of relatives in the state hospitals has been increased from $3.50 to $5.00 a week.

Precautions Against Typhoid Urged.—The monthly bulletin of the State Department of Health publishes a special warning to health officers, advising them to exercise more than usual precautions against typhoid fever, as the first rains after the prolonged drought may wash infected material into water supplies. It is suggested that local health boards advise consumers to boil their water. The department also urges immediate notification to the local health officer if any patient is suspected of having cholera.

Lunacy Board Retrenches.—The State Lunacy Commission recommends radical steps for the purpose of cutting down expenses. It is suggested that a single commissioner be substituted for the three present members. It is also suggested that instead of each hospital having its own attorney the work be assigned to deputies in the attorney-general's office. The commission also proposes to replace the three alienists who examine immigrants at the port of New York, by one alienist with two lay deputies. The insane in the state are increasing at the rate of about 1,200 per year and cost the state $8,000,000 last year.

September Mortality.—The death rate in the state for September was 15.4 per 1,000, the lowest for any month thus far for the year, excepting June, when there were 350 fewer deaths than in September, when there were 11,233. There were 1,400 deaths of infants under two years of age as against 600 for June. Epidemic diseases caused 4.2 per cent. of the deaths of September. Typhoid fever has been the chief contributor to this, causing 185 of the 476 deaths from these causes. Diphtheria has only 100 deaths while in the months preceding the deaths from this cause numbered from 150 to 250. Poliomyelitis has been the reported cause of 21 deaths and numerous epidemics exist.

Rabies in New York State.—Statistics of the State Department of Health show that this state has for 2 or 3 years been suffering from an epidemic of rabies. Statistics compiled up to April 1, 1910, show that at that time the disease existed in sixteen counties, and the State Department had quarantined two villages, seven cities and fifty-one townships. During the years 1908, 1909 and 1910, to date, the records show that 105 persons have been bitten by rabid animals, 12 of whom died; 10 horses were bitten, of which 5 died; 68 cattle were bitten, of which 38 died; 11 swine bitten, 10 of which died. This does not include hundreds of dogs that have died of rabies or have been killed because of showing some symptoms of the disease. These figures are very large when the fact that the disease has been stamped out by proper methods of control in some other countries is considered.

Society Meetings.—The annual meeting of the Medical Association of Central New York was held in Syracuse, October 20 and 21. Dr. Wesley T. Mulligan, Rochester, was elected president; Dr. William G. Johnson, vice-president; John J. Buettner, Syracuse, secretary, and Dr. Charles O. Boswell, Rochester, treasurer. The next meeting will be held in Rochester. ——The Fifth District Branch of the Medical Society of the State of New York held its annual meeting in Syracuse, October 19, and the following officers were elected: president, Dr. Arthur A. Gillette, Rome; vice-president, Dr. Conway W. Frost, Utica; secretary, Dr. Frederick, H. Flaherty, Syracuse, and treasurer, Dr. Henry A. Hoyt, Watertown.——At the annual meeting of the Orleans County Medical Society, held in Albion, October 4, the following officers were elected: president, Dr. John H. Taylor, Holley; vice-president, Dr. Fremont W. Scott, Medina; secretary-treasurer, Dr. Ralph E. Brodie, Albion, and censors, Drs. Edward Munson, Medina, John Dugan, Albion, and George Post, Holly (since deceased). ——The Eighth District Branch of the Medical Society of the State of New York held its meeting in Buffalo, September 30, and elected the following officers: president, Dr. Thomas H. McKee, Buffalo; vice-presidents, Drs Henry A. Eastman, Jamestown, and Arthur G. Bennett, Buffalo; secretary, Dr. Carl S. Tompkins, Buffalo, and treasurer, Dr. Charles A. Wall, Buffalo.

New York City

Awarded Verdict.—A jury in the supreme court before Justice Ford is said to have returned a verdict of $3,000 in favor of Mrs. Freda Lazarowitz, who sued Dr. Philip Sussman, alleging lack of care in the use of chloroform was responsible for the death of her son.

Measles on Ocean Steamer.—The steamer *Ultonia*, which reached New York from Trieste, November 3, was detained at quarantine on account of measles. Fifty passengers, including many mothers and children, were transferred to Hoffman Island for observation and treatment.

Tuberculosis Hospital of Metropolitan Life Insurance Company.—This company has decided to change the location of its proposed tuberculosis sanitarium from Sullivan to Saratoga County. An application has been filed with the State Health Commissioner for permission to construct a sanitarium at Mount McGregor.

Harvey Lecture.—The third of the present course of Harvey lectures to be delivered on November 19 in Hosack Hall, New York Academy of Medicine, at 8:15, is by Prof. Jacques Loeb of the Rockefeller Institute of Medical Research, on "The Prevention of the Toxic Action of Various Agencies Through the Prevention of Oxidation in the Cell."

Street and Yard Singing.—Numerous complaints have been received by the health board of the annoyance caused by singing in back yards and streets, which under the present ordinance the health department is powerless to remedy. Some of the health board officers voice the opinion that the ordinance should be so amended as to do away with the singing nuisance and also enforce quiet in the neighborhood of schools.

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OREGON

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PENNSYLVANIA

Personal.—Drs. Lawrence Litchfield, Irwin J. Moyer, John W. Boyce, Thomas D. Davis and Percival J. Eaton have been appointed members of the examining board of the Civil Service of Pittsburg.——Dr. William A. Nealon, Pittsburg, was thrown from his automobile November 6, and sustained a slight injury to the hip.——Dr. Cornelius C. Wholey has been appointed a member of the staff of St. Francis Hospital, Pittsburg, in charge of the inebriate department.

Meeting of Northeastern Jefferson Alumni.—The Jefferson Alumni Association of Northeastern Pennsylvania held its annual meeting and banquet at Wilkes-Barre, November 10. There were sixty-five alumni present. Drs. W. M. Late Coplin and John H. Gibbon represented the faculty. The following officers were elected: president, Dr. Granville T. Matlack, Wilkes-Barre; vice-presidents, Drs. Henry M. Neale, Upper Lehigh, Daniel H. Lockard, Plymouth, and Harry W. Albertson, Scranton; secretary, Dr. J. Norman White, Scranton; and treasurer, Dr. Connell E. Murrin, Scranton.

Philadelphia

Personal.—Dr. James Tyson has been made emeritus professor of medicine, and Dr. Louis A. Duhring emeritus professor of dermatology of the University of Pennsylvania.——Dr. James E. Talley, who has been confined to the house because of injuries received in an automobile collision, is able to be out again.——Dr. Horatio C. Wood, Jr., has been appointed professor of materia medica and therapeutics in the Medico-Chirurgical College to fill the vacancy caused by the death of Dr. John V. Shoemaker.

Bequests.—Robert Steele provides in his will that his estate, amounting to $20,786, shall be placed in trust and that the income go to the widow, Amelia Steele, and following her death, the principal is to be divided among three charities. The Presbyterian Hospital is to receive $5,000 to establish a free bed in that institution, and the Presbyterian Home for Widows and Single Women, $3,000.——The will of the late James Brown provides that his estate, valued at $12,500, be placed in trust for the benefit of his widow during her life. At her death the Philadelphia Home for Incurables will receive $1,500.

Work of the Food Inspectors.—Deputy United States Marshal Myers and W. H. Jenkins, a federal food and drug inspector, seized 1,200 bottles of an alleged counterfeit "patent medicine" in the warehouse of Carbone & Co., which are said to have been purchased for the genuine from the Italian Trading Company. The medicine has had an extensive sale in the Italian section of the city, the genuine "bitters" being much used in Italy and manufactured in Milan. The food inspectors say that the Italian Trading Company recently sent representatives to the dealers in the "bitters," offering to sell them the same article at much less than they would have to pay for the imported. On this information government officials began an investigation. Samples were sent to Washington, where it was found that for grain alcohol in the genuine article, wood alcohol had been substituted and that it existed in such degree as to be extremely dangerous. On the same day 10 barrels of putrid tomato pulp were seized at the plant of the Philadelphia Pickling Co. It had been shipped here from Cambridge, Md.

Dr. Keen Operated On.—Dr. W. W. Keen has been operated on for abdominal complications and is making excellent progress toward recovery. Knowing the interest that his many friends and former pupils have in his health, THE JOURNAL secured from an authoritative source the following statement: While abroad last summer, Dr. Keen experienced some symptoms of intestinal trouble. He was examined by Dr. George A. Gibson in Edinburgh, by Dr. W. Hale White and Mr. Mummery in London, and later in Berlin by Prof. Eiselsberg of Vienna. All of them discovered an obscure tumor in the left lower abdomen. On having these facts confirmed and after consultation with his advisers, Dr. Keen decided that an abdominal section was the only positive way to determine whether the mass was a carcinoma, as seemed most likely at his age, or was non-malignant in character, and whether or not it was operable. Accordingly, as soon as possible after his return he went to Rochester, Minn., and was operated on November 9. It was found that the tumor was due to a perforating diverticulitis of the sigmoid with dense adhesions and moderate obstruction. There were two fecal stones, one of which had perforated and lay in a pocket outside the intestinal wall. It was necessary to remove a portion of the sigmoid.

VIRGINIA

Antituberculosis League Organized.—The Antituberculosis League of Petersburg was organized October 20. Dr. William F. Drewry was elected first vice-president. The principal speaker of the evening was Dr. Douglas S. Freeman, Richmond, executive secretary of the State Antituberculosis Society.

Conference on Tuberculosis.—A conference on tuberculosis will be held in Richmond, December 15 and 16. During the conference the annual business meeting of the State Antituberculosis Association will be held. At the first meeting the medical aspects of tuberculosis will be discussed. Dr. Ennion G. Williams, Richmond, state health commissioner, will preside at the first meeting. Open-air treatment will be the topic of the second meeting and tuberculosis in the cities will be that of the third session, and the fourth session will be given up to the consideration of tuberculosis, education and publicity.

WASHINGTON

Physician Leaves Bequest for Trade School.—About $100,000 is provided by the will of the late Dr. Marcel Pietrzycki, Dayton, for the building of and endowment of a trade school in Dayton.

Healers Plead Guilty.—Mrs. E. V. C. Robinson, Tacoma, a healer charged with practicing medicine without a license, is said to have pleaded guilty. Sentence was deferred.——In the case of Alexander McMasters, Spokane, charged with practicing medicine without a license, the defendant is said to have pleaded guilty, and to have been fined $50 and costs.

Personal.—Drs. Christian Quevli and Edward A. Trommald, Tacoma, have returned from Europe.——Dr. Philip Donohoo has sold his interest in the Dayton Hospital to Dr. Arthur F. Barnett, Walla Walla.——Dr. Nellie M. Baker, Urbana, Ill., has been made resident physician at a hospital in Yakima.——Dr. Frederick W. Southworth, Tacoma, who has been seriously ill, is reported to be convalescent.

GENERAL NEWS

Rush Men in Kansas and Missouri Assemble.—At the annual meeting and banquet of Rush Medical College alumni of Kansas and Missouri a permanent organization was effected. Dr. David E. Broderick, Kansas City, Mo., was elected president, and Lyman L. Uhls, Osawatomie, Kan., vice-president.

Ohio Valley Physicians Meet.—The twelfth annual meeting of the Ohio Valley Medical Association was held in Evansville, Ind., November 9 and 10. The following officers were elected: president, Dr. William D. Haines, Cincinnati; vice-presidents, Drs. Louis D. Brose, Evansville, Ind., Daniel N. Eisendrath, Chicago, and Henry R. Alburger, Bloomington, Ind., and secretary-treasurer, Dr. Benjamin L. W. Floyd, Evansville, Ind.

Cotton Belt Surgeons Elect.—The Association of Surgeons of the Cotton Belt System held its annual meeting at the general hospital of the company, Texarkana, Tex., November 1, and elected the following officers: Dr. John L. Jelks, Memphis, Tenn., president; Drs. Jesse S. Rinehart, Camden, Ark., Warren B. DeJernett, Commerce, Tex., Oscar Dowling, New Orleans, La., Homer E. Beall, Malden, Mo., and William F. Grinstead, Cairo, Ill., vice-presidents, and Dr. Harvey H. Smiley, Texarkana, Tex., secretary-treasurer (re-elected).

Meeting of American Physicians Practicing in Mexico.—The International Medical Association, composed of American physicians in practice in Mexico, met in El Paso, Texas, October 27, as guests of the El Paso County Medical Society. The following officers were elected: Dr. R. H. L. Bibb, Saltillo, Coahuila, president; Dr. J. S. Steele, Monterey, president-elect; Dr. F. W. Taube, Zacatecas, vice-president; Dr. H. S. Hodgson, Tampico, secretary-treasurer, and Dr. G. C. English, Guanajuato, censor. The next meeting will be held in Saltillo.

Occupation for Chronic Invalids and "Shut-Ins."—Passed Assistant Surgeon John M. Holt, U. S. P. H. and M. H. Service, Astoria, Ore., suggests that many chronic invalids and "shut-ins" may secure much mental rest and pleasant occupation of long hours, by becoming acquainted with the fascination of collecting, studying, sorting, and arranging postage stamps. A number of those interested in this pastime have agreed to make up Christmas packages containing stamps, albums, stickers, etc., for gratuitous distribution during the holiday season. Dr. Holt requests members of the profession all over the United States to furnish him with names and addresses of individuals who might be entertained by such remembrances.

National Meetings to Come.—The American Public Health Association will hold its next meeting in Havana, Cuba, December 4-9, 1911. The Academy of Medicine has offered its building for the general sessions and the Hotel Cevilla will be headquarters. Local physicians ask that tuberculosis be given the most prominent place on the program. It is expected that at this meeting the recently organized sociologic section and the section on sanitary engineering may be put on a substantial foundation.——The American Association for the Advancement of Science will hold its annual meeting in Minneapolis, December 27 to January 1. The majority of the meetings will be held in the halls of the University of Minnesota. One day will be given to St. Paul and the State Agriculture College.

Birth Registration Propaganda.—At the first meeting of the advisory board recently appointed by Health Commissioner Lederle, New York City, to prepare recommendations for the improvement of vital statistics in that city, a recommendation was adopted unanimously that the most important improvement which could be made consisted in the verification of the birth registration of every infant who dies under one year of age, in order to detect omissions and to cause strict enforcement of the law providing a penalty for omission to record a birth in every case thus brought to light. The census bureau is greatly interested in this movement because one of the greatest defects of American vital statistics is the entire lack of reliable rates of infant mortality due to defective birth registration.

Aim to Prolong Infant Life.—The second annual Congress of the American Association for the Study and Prevention of Infant Mortality was held in Baltimore, November 9-11. The following officers were elected: president, Prof. Charles R. Henderson, University of Chicago; president-elect, Dr. Cressy L. Wilbur, Washington, D. C.; vice-presidents, Harold McCormick, Chicago, and Dr. Henry L. Coit, Newark, N. J.; secretary, Dr. Frank S. Churchill, Chicago; executive secretary, Miss Gertrude B. Knipp, Baltimore; treasurer, Austin McLanahan, Baltimore, and executive committee, Drs. J. H. Mason Knox, Jr., Baltimore, Joseph S. Neff, Philadelphia, John S. Fulton, Baltimore, Mary Sherwood, Baltimore, and Helen C. Putnam, Providence, R. I. Chicago was chosen as the place for next meeting. Baltimore will continue to be headquarters of the national organization.

Physicians of the South in Convention.—The fourth annual meeting of the Southern Medical Association was held in Nashville, Tenn., November 8-10, under the presidency of Dr. Walter W. Crawford, Hattiesburg, Miss. The following officers were elected: president, Dr. Isadore Dyer, New Orleans; vice-presidents, Drs. William Litterer, Nashville, Tenn., William P. Adamson, Tampa, Fla., William C. Lyle, Augusta, Ga., Thomas D. Parke, Birmingham, Ala., James B. Guthrie, New Orleans, La., and Andrew G. Paine, Greenville, Miss.; and secretary-treasurer, Dr. Seale Harris, Mobile, Ala. The association adopted resolutions urging congress to establish a national department of health, and also urging the legislatures of the different southern states to pass laws compelling the inspection of school children at stated intervals. The association will meet next year in Hattiesburg, Miss.

MANILA LETTER

(From Our Regular Correspondent)

Manila, Oct. 4, 1910.

Residence in the Tropics

The effect of residence in the tropics on one's physical and mental self is a subject of not infrequent conversation in Manila. Especially is this the case, since the Americans are not altogether living up to the custom of the quiet, easy-going life, with a siesta in the middle of the day, of the average European in the tropics, nor to the Filipino motto of *manana* (to-morrow). To what extent continued residence in the tropics exerts a deleterious effect on the average individual reared in the temperate climates is a difficult matter to determine, and there is little direct evidence to confirm this supposition, which is so common a belief among the average Europeans and Americans who come to the Philippines. It is true that many women do not enjoy good health here and there are relatively a large number of children more or less anemic, and the predisposition to develop "Philippinitis" (a more or less indefinite term designed to excuse inefficiency, absentmindedness, and a general lack of ambitious endeavor) seems more or less common. But it is not known just how much all of these are due to a lack of sufficient exercise, to association, to the newness and not highly organized condition of the country and to the fact that, as middle life is approached, one becomes less and less inclined to venture into new fields and feels oneself prone to slacken one's nervous pace and perhaps to become somewhat lazy. In addition, the fact that the climate does not permit of so much strenuous exercise, is little indication that one's mental activities are in the least circumscribed. All the rush and hustle and nervousness of the larger American cities does not imply that, from a creative standpoint, the most is being accomplished. It is perhaps comparison along this line which makes life in the tropics seem slower and one feels himself apparently capable of less endeavor. It must be remembered that in the point of numbers of the white population, all Oriental tropical cities are comparatively small towns, and competition and incentive are less. In the case of the medical man, Manila (with 9,000 whites) probably furnishes as much stimulus and incentive as any town of from 40,000 to 80,000 inhabitants in the United States, and the local medical men perhaps keep as well posted in the advancement of medical science as similar men in these towns. Such considerations must be borne in mind before the tropics as a place of residence are condemned. After all it may be just as logical for the Filipino to shy at living in Chicago, from fear of developing heart disease and nervous disintegration, as it is for the American to shun life in Manila on account of the "deleterious effect of a continued residence in the tropics." Nevertheless, after long experience in both India and Egypt, many prominent British physicians long have been convinced of the validity of this supposition, and some of the Rockefeller Institute of Medical Research, on "The Prevention of the Toxic Action of Various Agencies Through the Prevention of Oxidation in the Cell."

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PENNSYLVANIA

Personal.—Drs. Lawrence Litchfield, Irwin J. Moyer, John W. Boyce, Thomas D. Davis and Percival J. Eaton have been appointed members of the examining board of the Civil Service of Pittsburg.——Dr. William A. Nealon, Pittsburg, was thrown from his automobile November 6, and sustained a slight injury to the hip.——Dr. Cornelius C. Wholey has been appointed a member of the staff of St. Francis Hospital, Pittsburg, in charge of the inebriate department.

Meeting of Northeastern Jefferson Alumni.—The Jefferson Alumni Association of Northeastern Pennsylvania held its annual meeting and banquet at Wilkes-Barre, November 10. There were sixty-five alumni present. Drs. W. M. Late Coplin and John H. Gibbon represented the faculty. The following officers were elected: president, Dr. Granville T. Matlack, Wilkes-Barre; vice-presidents, Drs. Henry M. Neale, Upper Lehigh, Daniel H. Lockard, Plymouth, and Harry W. Albertson, Scranton; secretary, Dr. J. Norman White, Scranton; and treasurer, Dr. Connell E. Murrin, Scranton.

Philadelphia

Personal.—Dr. James Tyson has been made emeritus professor of medicine, and Dr. Louis A. Duhring emeritus professor of dermatology of the University of Pennsylvania.——Dr. James E. Talley, who has been confined to the house because of injuries received in an automobile collision, is able to be out again.——Dr. Horatio C. Wood, Jr., has been appointed professor of materia medica and therapeutics in the Medico-Chirurgical College to fill the vacancy caused by the death of Dr. John V. Shoemaker.

Bequests.—Robert Steele provides in his will that his estate, amounting to $20,786, shall be placed in trust and that the income go to the widow, Amelia Steele, and following her death, the principal is to be divided among three charities. The Presbyterian Hospital is to receive $5,000 to establish a free bed in that institution, and the Presbyterian Home for Widows and Single Women, $3,000.——The will of the late James Brown provides that his estate, valued at $12,500, be placed in trust for the benefit of his widow during her life. At her death the Philadelphia Home for Incurables will receive $1,500.

Work of the Food Inspectors.—Deputy United States Marshal Myers and W. H. Jenkins, a federal food and drug inspector, seized 1,200 bottles of an alleged counterfeit "patent medicine" in the warehouse of Carbone & Co., which are said to have been purchased for the genuine from the Italian Trading Company. The medicine has had an extensive sale in the Italian section of the city, the genuine "bitters" being much used in Italy and manufactured in Milan. The food inspectors say that the Italian Trading Company recently sent representatives to the dealers in the "bitters," offering to sell them the same article at much less than they would have to pay for the imported. On this information government officials began an investigation. Samples were sent to Washington, where it was found that for grain alcohol in the genuine article, wood alcohol had been substituted and that it existed in such degree as to be extremely dangerous. On the same day 10 barrels of putrid tomato pulp were seized at the plant of the Philadelphia Pickling Co. It had been shipped here from Cambridge, Md.

Dr. Keen Operated On.—Dr. W. W. Keen has been operated on for abdominal complications and is making excellent progress toward recovery. Knowing the interest that his many friends and former pupils have in his health, The Journal secured from an authoritative source the following statement: While abroad last summer, Dr. Keen experienced some symptoms of intestinal trouble. He was examined by Dr. George A. Gibson in Edinburgh, by Dr. W. Hale White and Mr. Mummery in London, and later in Berlin by Prof. Eiselsberg of Vienna. All of them discovered an obscure tumor in the left lower abdomen. On having these facts confirmed and after consultation with his advisers, Dr. Keen decided that an abdominal section was the only positive way to determine whether the mass was a carcinoma, as seemed most likely at his age, or was non-malignant in character, and whether or not it was operable. Accordingly, as soon as possible after his return he went to Rochester, Minn., and was operated on November 9. It was found that the tumor was due to a perforating diverticulitis of the sigmoid with dense adhesions and moderate obstruction. There were two fecal stones, one of which had perforated and lay in a pocket outside the intestinal wall. It was necessary to remove a portion of the sigmoid.

VIRGINIA

Antituberculosis League Organized.—The Antituberculosis League of Petersburg was organized October 20. Dr. William F. Drewry was elected first vice-president. The principal speaker of the evening was Dr. Douglas S. Freeman, Richmond, executive secretary of the State Antituberculosis Society.

Conference on Tuberculosis.—A conference on tuberculosis will be held in Richmond, December 15 and 16. During the conference the annual business meeting of the State Antituberculosis Association will be held. At the first meeting the medical aspects of tuberculosis will be discussed. Dr. Ennion G. Williams, Richmond, state health commissioner, will preside at the first meeting. Open-air treatment will be the topic of the second meeting and tuberculosis in the cities will be that of the third session, and the fourth session will be given up to the consideration of tuberculosis, education and publicity.

WASHINGTON

Physician Leaves Bequest for Trade School.—About $100,000 is provided by the will of the late Dr. Marcel Pietrzycki, Dayton, for the building of and endowment of a trade school in Dayton.

Healers Plead Guilty.—Mrs E V. C Robinson, Tacoma, a healer charged with practicing medicine without a license, is said to have pleaded guilty. Sentence was deferred ——In the case of Alexander McMasters, Spokane, charged with practicing medicine without a license, the defendant is said to have pleaded guilty, and to have been fined $50 and costs

Personal—Drs Christian Quevli and Edward A Trommald, Tacoma, have returned from Europe ——Dr. Philip Donohoo has sold his interest in the Dayton Hospital to Dr. Arthur F. Barnett, Walla Walla ——Dr Nellie M Baker, Urbana, Ill, has been made resident physician at a hospital in Yakima. ——Dr Frederick W Southworth, Tacoma, who has been seriously ill, is reported to be convalescent.

GENERAL NEWS

Rush Men in Kansas and Missouri Assemble.—At the annual meeting and banquet of Rush Medical College alumni of Kansas and Missouri a permanent organization was effected Dr David E Broderick, Kansas City, Mo, was elected president, and Lyman L Uhls, Osawatomie, Kan, vice president

Ohio Valley Physicians Meet—The twelfth annual meeting of the Ohio Valley Medical Association was held in Evansville, Ind November 9 and 10 The following officers were elected president, Dr William D Haines, Cincinnati, vice presidents, Drs Louis D Brose, Evansville, Ind, Daniel N Eisendrath, Chicago, and Henry R Alburger, Bloomington, Ind, and secretary-treasurer, Dr Benjamin L W Floyd, Evansville, Ind

Cotton Belt Surgeons Elect.—The Association of Surgeons of the Cotton Belt System held its annual meeting at the general hospital of the company, Texarkana, Tex, November 1, and elected the following officers Dr John L Jelks, Memphis, Tenn, president, Drs Jesse S Rinehart, Camden, Ark, Warren B DeJernett, Commerce, Tex, Oscar Dowling, New Orleans, La, Homer E Beall, Malden, Mo, and William F Grinstead, Cairo, Ill, vice presidents, and Dr Harvey H Smiley, Texarkana, Tex, secretary treasurer (re elected).

Meeting of American Physicians Practicing in Mexico.—The International Medical Association, composed of American physicians in practice in Mexico, met in El Paso, Texas, October 27, as guests of the El Paso County Medical Society The following officers were elected Dr R H L Bibb, Saltillo, Coahuila, president, Dr J S Steele, Monterey, president-elect, Dr F W Taube, Zacatecas, vice president, Dr H S Hodgson, Tampico, secretary treasurer, and Dr G C English, Guanajuato, censor The next meeting will be held in Saltillo

Occupation for Chronic Invalids and "Shut-Ins"—Passed Assistant Surgeon John M Holt, U S P H and M H Service, Astoria, Ore, suggests that many chronic invalids and "shut ins" may secure much mental rest and pleasant occupation of long hours, by becoming acquainted with the fascination of collecting, studying, sorting, and arranging postage stamps A number of those interested in this pastime have agreed to make up Christmas packages containing stamps, albums, stickers, etc, for gratuitous distribution during the holiday season Dr Holt requests members of the profession all over the United States to furnish him with names and addresses of individuals who might be entertained by such remembrances

National Meetings to Come.—The American Public Health Association will hold its next meeting in Havana, Cuba, December 4 9, 1911 The Academy of Medicine has offered its building for the general sessions and the Hotel Sevilla will be headquarters Local physicians ask that tuberculosis be given the most prominent place on the program It is expected that at this meeting the recently organized sociologic section and the section on sanitary engineering may be put on a substantial foundation ——The American Association for the Advancement of Science will hold its annual meeting in Minneapolis, December 27 to January 1 The majority of the meetings will be held in the halls of the University of Minnesota One day will be given to St Paul and the State Agriculture College

Birth Registration Propaganda—At the first meeting of the advisory board recently appointed by Health Commissioner Lederle, New York City, to prepare recommendations for the improvement of vital statistics in that city, a recommendation was adopted unanimously that the most important improvement which could be made consisted in the verification of the birth registration of every infant who dies under one year of age, in order to detect omissions and to cause strict enforcement of the law providing a penalty for omission to record a birth in every case thus brought to light The census bureau is greatly interested in this movement because one of the greatest defects of American vital statistics is the entire lack of reliable rates of infant mortality due to defective birth registration

Aim to Prolong Infant Life—The second annual Congress of the American Association for the Study and Prevention of Infant Mortality was held in Baltimore, November 9-11. The following officers were elected· president, Prof Charles R Henderson, University of Chicago, president elect, Dr. Cressy L. Wilbur, Washington, D C, vice presidents, Harold McCormick, Chicago, and Dr Henry L Coit, Newark, N J., secretary, Dr Frank S Churchill, Chicago, executive secretary, Miss Gertrude B Knipp, Baltimore, treasurer, Austin McLanahan, Baltimore, and executive committee, Drs J H Mason Knox, Jr, Baltimore, Joseph S Neff, Philadelphia, John S Fulton, Baltimore, Mary Sherwood, Baltimore, and Helen C. Putnam, Providence, R I Chicago was chosen as the place for next meeting Baltimore will continue to be headquarters of the national organization

Physicians of the South in Convention—The fourth annual meeting of the Southern Medical Association was held in Nashville, Tenn, November 8 10, under the presidency of Dr Walter W Crawford, Hattiesburg, Miss The following officers were elected president, Dr Isadore Dyer, New Orleans; vice presidents, Drs William Litterer, Nashville, Tenn, William P. Adamson, Tampa, Fla, William C Lyle, Augusta, Ga, Thomas D Parke, Birmingham, Ala, James B Guthrie, New Orleans, La, and Andrew G Paine, Greenville, Miss, and secretary treasurer, Dr Seale Harris, Mobile, Ala The association adopted resolutions urging congress to establish a national department of health, and also urging the legislatures of the different southern states to pass laws compelling the inspection of school children at stated intervals The association will meet next year in Hattiesburg, Miss

MANILA LETTER

(From Our Regular Correspondent)

Manila, Oct. 4, 1910

Residence in the Tropics

The effect of residence in the tropics on one's physical and mental self is a subject of not infrequent conversation in Manila Especially is this the case, since the Americans are not altogether living up to the custom of the quiet, easy going life, with a siesta in the middle of the day, of the average European in the tropics, nor to the Filipino motto of *manana* (to morrow) To what extent continued residence in the tropics exerts a deleterious effect on the average individual reared in the temperate climates is a difficult matter to determine, and there is little direct evidence to confirm this supposition, which is so common a belief among the average Europeans and Americans who come to the Philippines It is true that many women do not enjoy good health here and there are relatively a large number of children more or less anemic, and the predisposition to develop "Philippinitis" (a more or less indefinite term designed to excuse inefficiency, absentmindedness, and a general lack of ambitious endeavor) seems more or less common But it is not known just how much all of these are due to a lack of sufficient exercise to association, to the newness and not highly organized condition of the country and to the fact that, as middle life is approached, one becomes less and less inclined to venture into new fields and feels oneself prone to slacken one's nervous pace and perhaps to become somewhat lazy In addition, the fact that the climate does not permit of so much strenuous exercise, is little indication that one's mental activities are in the least circumscribed All the rush and hustle and nervousness of the larger American cities does not imply that, from a creative standpoint, the most is being accomplished It is perhaps comparison along this line which makes life in the tropics seem slower and one feels himself apparently capable of less endeavor It must be remembered that in the point of numbers of the white population, all Oriental tropical cities are comparatively small towns, and competition and incentive are less In the case of the medical man, Manila (with 9,000 whites) probably furnishes as much stimulus and incentive as any town of from 40 000 to 80 000 inhabitants in the United States, and the local medical men perhaps keep as well posted in the advancement of medical science as similar men in these towns Such considerations must be borne in mind before the tropics as a place of residence are condemned After all it may be just as logical for the Filipino to shy at living in Chicago, from fear of developing heart disease and nervous disintegration, as it is for the American to shun life in Manila on account of the "deleterious effect of a continued residence in the tropics" Nevertheless, after long experience in both India and Egypt, many prominent British physicians long have been convinced of the validity of this supposition, and some investigation to determine the underlying cause has been made here in the Philippines. Dr. W. E. Musgrave, professor of clinical medicine in the Philippine Medical School and the American physician of longest residence in the Philippines, sums up his convictions on the subject as follows: "The lot of one transiently present in the Philippines is not a particularly hazardous one. Such a person's chances of avoiding infectious diseases and otherwise of maintaining good health are equal to his chances in most countries of the world, and are far better than they are in any other tropical far eastern or Asiatic country. However, prolonged or permanent residence in these islands or in any other tropical country certainly produces deleterious effects on people, be they of native or foreign birth. The usually accepted statement that the tropics exert any especially bad influence on the foreigner from which the native escapes is, so far as my observations go, not borne out by the facts. But it is a fact that prolonged residence produces, or is intimately connected with, certain disease conditions which are not particular to any race, nationality or complexion, and these irregularities are cured only by at least a temporary change of climate and surroundings. In the case of natives of the tropics, generations of residence has produced, to say the least, a more or less uniform dwarfing of energy and efficiency; and with this have developed altered standards of measurements in which the inaccuracy of the normal is only noticed by comparison. This comparison may be made with foreigners or, still better, and the results are just as striking, in born natives of the tropics who have been removed to temperate climates." The principal change is thought to be a tendency toward a condition of general sluggishness of mind and body. But "in the case of children the problem is a more important one. . . . Among medical men of experience in the tropics I believe the opinion is a very general one that children should not reside in the tropics during the formative period of years. The exact etiologic factor in these conditions is not known; heat, the actinic rays of the sun, and many other agents have been incriminated, but it is probable that the cause is really broader and more complex and has to do with the peculiar arrangement of the natural laws governing health and disease."

At the Bureau of Science a physical analysis has been made of the tropical sunlight and a determination of the total yearly and the average daily amount of sunlight of different qualities is still in progress. After completing this study it is hoped to get data of this kind from various countries in the temperate climate for comparison. The question of the so-called actinic rays of the sun will probably be greatly elucidated by such investigations.

LONDON LETTER

(From Our Regular Correspondent)

London, Nov. 5, 1910.

Plague in England

In a previous letter to The Journal [November 5, p. 1658] cases of plague in ships which arrived in the Thames have been reported. It has now been found that plague prevails extensively among rats in part of Suffolk, one of the eastern counties of England, and that a few cases have occurred in man. Hares and rabbits also have been attacked. The outbreak seems to be due to the landing of an infected rat or rats from one of the many grain-vessels which enter the river Orwell from plague-infected countries. The immense overseas trade of this country causes wonder that such an event has not occurred previously. Improved sanitation has much diminished the danger, however. There has been no epidemic of plague in this country since the great plague of the reign of Charles II, so graphically described by Defoe. The greatest vigilance is practiced in all our ports to exclude plague-infected rats. Whenever dead rats are discovered in a ship the vessel is disinfected and the holds are cleared out; in addition the docks are overhauled at intervals. Last year many rats affected with plague died in a warehouse in one of the London docks, but the disease was completely controlled by the sanitary authorities. The same thing has occurred in other ports on a small scale. In the infected district of Suffolk (about 20,000 acres) a most energetic campaign is being carried on for the destruction of rats by the health authorities and the inhabitants, and many thousands of rats are being killed daily by rat-catchers, dogs, guns, ferrets and poison. A cat, which was shot and buried because it was looking ill, was unearthed by the health authorities and bacteriologic examination made, which showed the presence of plague bacilli. So far only four cases have occurred in man. At the scattered little village of Freston 4 miles from Ipswich, the capital of the county, four persons died from a mysterious illness. The outbreak began in a child who was fondling a pet cat before her seizure. She died on the fourth day with symptoms of very acute septic pneumonia. On the day after her burial her mother, who had nursed her, was taken ill with similar pneumonic symptoms and died after forty-eight hours. Then the second patient's husband and a woman who nursed her were attacked and died on the fourth day. Before the death of the mother her physician entertained suspicions as to the nature of the disease and had a bacteriologic examination made of her blood and of expectoration which revealed the plague bacillus.

Poster Campaign Against Tuberculosis

A poster campaign against tuberculosis has been begun in the United Kingdom by the National Association for the Prevention of Consumption. On the boardings are displayed large posters measuring 10 by 7½ feet, on which are printed the main facts in regard to the disease and an appeal for funds to stamp it out. The precautionary measures to prevent attacks and the course to be followed in the earliest stages are stated.

The New Building for the Royal Society of Medicine

The Royal Society of Medicine, which, as stated in previous letters to The Journal, has been formed by the amalgamation of nearly all the medical societies of the metropolis and is therefore in a way the largest medical society, is erecting a new building into which it will move when completed, at the Cavendish Square end of Wimpole Street. The cost will be upwards of $150,000. Toward this the medical profession has subscribed $12,000 and an appeal is now being made to the public for subscriptions through a committee of which the Lord Mayor of London is chairman. He points out that for many years the society has been engaged in work of the utmost value not only to the state but to mankind, and that its fellows have not spared time, trouble, or expense in carrying out a really national and philanthropic work, which is not of the slightest personal advantage to the individual workers. If no less than $130,000 is contributed from without the society will be able to provide all the income necessary for continuing and enlarging its beneficent labors. It has now 3,200 fellows and members and a library of nearly 100,000 volumes. It was founded in 1805 under the name of "The Royal Medical and Chirurgical Society."

Divorce and Insanity

A royal commission appointed by the government to investigate the question of divorce is now sitting. The bearing of insanity on divorce was the subject on which evidence was taken at the last sitting. The British Medical Association appointed a number of eminent alienists to give evidence on the recognition of insanity as a ground for divorce. These were Dr. Smith Clouston, lecturer on mental diseases, Edinburgh University; Dr. Robert Jones, lecturer on mental diseases, St. Bartholomew's Hospital, and Dr. T. R. Hyslop, resident physician, Bethlehem Hospital. Dr. Smith Clouston was of opinion that there were certain forms of mental diseases for which the law should be so altered as to redress the present hardships to husbands and wives, and especially make provision for the better guardianship of children and prevent the birth of children with an undue liability to mental disease. Divorce should be applicable only to persons proved to labor under incurable mental disease, except in certain cases. One of the main proofs of incurability was the length of time during which a patient had suffered continuously from mental disease. In very few cases would Dr. Clouston feel justified in giving an opinion that a patient was incurable within twelve months of the onset of the disease, whatever the symptoms. In most cases no divorce proceedings should be allowed within from three to five years after the commencement of the mental disease. Dr. Clouston absolutely disapproved of the marriage of epileptics on medical and eugenic grounds. The disease was hereditary in a high degree and epileptics almost certainly had insane, epileptic, and idiotic progeny. If marriage was contracted a remedy should be possible by means of divorce. The congenitally feeble-minded, as distinguished from imbeciles and idiots, frequently married and a large number of the females produced illegitimate children. Divorce should always be obtainable and the most stringent means should be taken to prevent pregnancy in such feeble-minded young women. They were the source of vast amount of insanity, crime and pauperism. In alcoholic dementia divorce should always be applicable, because not only was the condition incurable but the subjects had brought it on by their own acts Dipsomaniacs should also come under any alteration in the divorce law, but he would give them ten years in which to recover. At a subsequent sitting Sir James Crichton Browne has stated that though the majority of doctors would be in agreement with these witnesses, a strong body of opinion in the profession holds a different view The proposal that insanity of any kind should be a ground for divorce seemed to him highly objectionable It would encourage imprudence in marriage, conduce to instability of the matrimonial state, and further impair the sanctity of family life Insanity was simply a bodily disease manifesting itself by a mental derangement and if it was to be recognized as a sufficient reason for divorce he did not see why other diseases should not be recognized also It was suggested that only incurable insanity would be a ground for divorce, but what was to be the test? Nothing had struck him more in his experience as a commissioner in lunacy than the way in which complete recovery occasionally took place in cases of insanity regarded by experts as utterly hopeless

An Ideal Meeting Room

There has been fitted up at the rooms of the Society of Medical Officers of Health, London, what is said by the society to be the most hygienic meeting place in London The room which can accommodate 150 persons, has been designed to demonstrate the working of ventilating, warming and lighting patents, and also to show the proper arrangement of a hygienic assembly room By means of levers the temperature can be raised or lowered immediately The air is drawn from outside by means of electric fans and carried along a shaft to radiators which warm it to the desired temperature It is then forced along another shaft to the sides of the room and diffused by a patent diffusing apparatus Meanwhile a powerful electric fan extracts the foul air Artificial light is supplied by gas, an enclosed globe like an electric arc lamp being suspended from the center of the ceiling, and governed by a patent vacuum switch which connects it with the by pass It is claimed that, however dense the fog outside, the air in the room will remain perfectly clear and pure In recognition of his services in connection with the Panama Canal sanitation work, the society has decided to elect Mr. Roosevelt a fellow.

Seventeenth International Congress of Medicine

The seventeenth International Congress of Medicine will be held in London in the summer of 1913 At a meeting of the General Medical Council, Sir Thomas Barlow, president of the Royal College of Physicians, was elected president of the congress, Mr G H Makins, treasurer, and Dr. Herringham, secretary An influential organizing committee representative of all the medical bodies in the country was also appointed It was resolved that distinguished laymen should be invited to associate themselves with the work of the congress The date led to considerable discussion. It was proposed to hold it at some date from July 29 to August 6, but as the British Medical Association always meets at that time it was decided to leave the president and executive officers to settle the date and to give them liberty to confer with the officers of the British Medical Association

The Right to Efficient Ventilation at Sea

The right to efficient ventilation at sea has been established in the courts by the following important case Two passengers returning from South Africa by the Union Castle Mail Steamship Co complained that their cabin was unventilated and paid $18 to occupy another cabin as "a cabin without a fan was quite intolerable" The company in their booklet stated that a complete system of ventilation had been adopted and that electricity was brought to bear on the cabins, saloons etc, by a large number of electric fans The judge said that anyone reading the booklet would think that all the cabins had electric fans As the discarded cabin had no fan he gave judgment for the passengers and ordered the company to return the money paid for the change of cabins

PARIS LETTER

(*From Our Regular Correspondent*)

PARIS, Nov 4, 1910

Statistics of the Population of France

The *Journal Officiel* has just published the statistics of the population of France for the first six months of 1910 The results, without being satisfactory, are less unfavorable than those of the corresponding six months of the previous year While in the first six months of 1909 an excess of 28 203 deaths was recorded, during the first six months of 1910 there was an excess of 21,189 births The births have not increased appreciably The birth rate still remains low 399,669 in 1910 in place of 398,710 in 1909 But the deaths have decreased considerably. 378,480 instead of 426,913 As for marriages, their number has remained stationary 156,761 in place of 156,258, and the divorces continue to increase 6 383 against 6,118 As for the Department of Seine, during the first six months of the present year, 37,319 births, 38,567 deaths, 20,389 marriages and 1,365 divorces have been recorded

Death of M. Henri Dunant

Hardly two and a half months have elapsed since the death of Miss Florence Nightingale, the celebrated organizer of the hospital and ambulance service of the Crimean war, and now Henri Dunant one of the founders of the Red Cross, has just died Inspired by the example of Florence Nightingale in 1859, during the war with Italy, he conceived the idea of organizing, by private initiative, an international service of aid to the wounded, which was rendered necessary by the inadequacy of the military ambulance service Born in 1828, Henri Dunant was 31 years old when the accidents of a pleasure journey brought him on the battle field of Solferino, strewn with dead and wounded, who were not picked up or cared for until two or three days had passed The brochure which Dunant published on this subject, in 1862 ("Un Souvenir de Solferino"), created an extraordinary sensation, and it was in great part owing to the propaganda of this apostle of charity that there was held in Geneva, October 26 29, 1863, the celebrated international conference which had for results the meeting of the diplomatic congress of August 8 22, 1864, and the conclusion of the convention of Geneva for the improvement of the condition of soldiers wounded during a campaign In 1867, Henri Dunant lost his fortune, and for twenty five years led a life of restriction and privation In 1901 he was awarded one of the Nobel prizes He died at Heiden, Appenzell Switzerland, on the shores of Lake Constance where he had lived for several years

Conference on Social Hygiene

The sixth annual meeting of the Alliance d'hygiène sociale, which has just been held at Marseilles, unanimously passed a resolution for the prohibition of the manufacture and sale of absinthe and the limitation of the number of licenses The assembly, moreover, adopted the following resolutions· (1) that all bills for the protection of children should be submitted to the parliamentary commission of hygiene, (2) that it was most desirable to pass a law against depopulation, for the protection of maternity and early childhood, and the awarding of aid to large families

Pharmacist Condemned for Fraud

A pharmacist has been condemned by the court of Amiens, Somme to pay damages to the *syndicat* of the pharmacists of the region for having sold syrup of ipecac to which he had added tartar emetic The delivery, under the name of syrup of ipecac, of another preparation, the court held. constituted fraud Moreover, the court recognized the fact that a professional association (*syndicat*) of pharmacists legally organized to prevent any injury to the moral interests of pharmacy had an indisputable moral interest in upholding its standards which justified its intervention as civil party to the suit and the awarding of damages

Clergymen in the Campaign Against Tuberculosis

The Oeuvre de la tuberculose humaine, which has organized antituberculosis leagues among all classes (teachers postal employees, members of benefit societies agents of the railways, public functionaries, etc), has just written to French clergymen of all faiths, asking them to devote one or two sermons annually to the cause represented by the society In each parish the inhabitants would then be initiated in the principles of hygiene and of sanitary prophylaxis

Bacillus Carriers

M Chéron, assistant secretary of the navy, has addressed to the maritime prefects a circular on the prophylaxis of the various forms of typhoidal infections and the means of contagion The circular calls the attention of the sanitary service to the necessity of isolating bacillus carriers, and recommends that sailors be informed of the daily dangers which threaten them in the places that they are required to frequent M Chéron requires that he be informed every six months of the measures taken for the application of his instructions and the results obtained

Nursing-Bottles with Tubes

Dr. Savary, inspector of public charities, draws attention to a regrettable omission in the law recently passed (The Journal Oct. 1, 1910, p. 1211) which prohibits the putting on sale, the exhibition and importation of nursing-bottles with tubes. Their use, however, has not been expressly prohibited, so that the inspectors of the public charities have no recourse against the nurses who persist in the old ways. The pharmacists have ceased to sell such apparatus, but the nurses who want to use the tube nursing-bottles because of the freedom which it leaves them make the apparatus themselves. A medical inspector, on a tour of inspection, saw several nursing-bottles with tubes made by nurses, and once found two babies, one of which had hereditary syphilis, in the same cradle sucking from a nursing-bottle with two tubes which the nurse had arranged. The nipples were frequently exchanged. Such facts show how important it is to amend the present law.

Death of Dr. Armand Trousseau

Dr. Armand Trousseau, head physician of the clinic of the Hospice des Quinze-Vingts and of the Rothschild ophthalmologic institution, has just died, aged 54, from an automobile accident. Dr. Trousseau was born in Paris in 1856. He was formerly an intern of the hospitals and specialized from the beginning of his career in diseases of the eye. In 1886 he entered the clinic of the Hospice des Quinze-Vingts, becoming head physician three years later. Having been called to attend Baron Adolphe de Rothschild, he advised the great banker to found the institution which bears his name. Baron de Rothschild in his will appointed Dr. Trousseau to direct this foundation. Dr. Trousseau was the grandson of the famous clinician who died in 1867.

Diminution of Cases of Hydrophobia

Dr. Maurice Letulle, *agrégé* professor at the Paris medical college, during the last session of the Council of Hygiene and Salubrity, made a report on hydrophobia during the period from 1904 to 1909, setting forth the success obtained in the prophylaxis of rabies. While in Paris and the Department of the Seine, the number of biting animals remains about the same from one year to another, the proportion of animals in which hydrophobia has been recognized is continually and rapidly decreasing. While 474 animals were affected with hydrophobia in 1902, there were only 172 in 1904, 120 in 1905, 74 in 1906, 46 in 1907, 55 in 1908, and 13 in 1909. Of all animals the one most to be feared is the dog. In 1909, of 1,903 biting animals there were 833 dogs, 247 horses, 6 cats and 7 miscellaneous. Cases of hydrophobia are more frequent in the suburbs than in Paris, since in the six years studied, Paris has had only 211 cases, while the suburbs have had 249. It is at the Pasteur Institute, especially, that the progress of the prophylaxis of hydrophobia can be estimated. From 1904 to 1909 the number of persons bitten in the Department of the Seine amounted to 7,576, of whom 307 were bitten by animals known to be mad (183 in the suburbs and 124 in Paris). The number bitten by rabid animals was about 87 in 1904, and about 90 in 1905. It has progressively decreased to 65 in 1906, 35 in 1907, 24 in 1908, and 6 in 1909. Out of the 1,069 individuals cared for since 1904, fortunately there has been only one fatal case, which occurred in 1904. This was the last victim of the scourge in the region of Paris. Within six years only two cases of hydrophobia have been found in more than 68,000 stray dogs captured at the Fourrière (establishment where stray and abandoned dogs are received). Previously there was an average of 26 a year (155 from 1898 to 1903). Human hydrophobia, which caused twenty-two deaths as late as 1885, and twelve in 1901, has caused none for five years.

To what is this progressive disappearance of endemic rabies in Paris due? Dr. Letulle does not hesitate to attribute it to administrative measures. The capture of stray dogs in Paris has rendered valuable service because it has been carried on with great zeal and strictness. According as the pursuit is carried on methodically and without cessation, or relaxes for one reason or another, hydrophobia diminishes, seems to become extinguished, or revives and multiplies the number of its victims. It is necessary, then, to persist without slackening in the annual capture of twelve or fourteen thousa stray dogs in Paris if we wish to extirpate hydrophobia.

The Value of Tuberculin Therapy

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(From Our Regular Correspondent)

Berlin, Oct. 28, 1910.

Personal

Professor Brandenburg, director of the internal department of the district hospital of Grosslichterfeld, has been appointed head physician of the second internal department of the Rudolf Virchow hospital. He is the successor of Professor L. Kuttner, who, as previously announced, has been appointed director of the department.

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Professor Zangemeister, a pupil of Professor Winter of Königsberg, has been called to Marburg as director of the gynecologic clinic to succeed Professor Stöckel.——Professor v. Leube of Würzburg celebrated the completion of his twenty-fifth year as regular professor, October 31.

Semicentennial of the Berlin Medical Society

Oct. 26 the Berliner medizinische Gesellschaft celebrated its semicentennial. The memorial meeting was of peculiar importance, as this society is not only the largest medical association in Berlin, but also one of the most noted and largest in Germany and can look back on a notable past. The society was formed by the union of two Berlin societies. The older of these was founded in 1844 as a society for scientific medicine, and the younger was the Verein Berliner Aerzte, founded in 1858. In order to obviate any difficulties arising from the union of the two societies, which took place in 1860, Rudolf Virchow resigned his position as president of the society for scientific medicine, in favor of Albrecht v. Gräfe, the president of the other society. The Berlin Medical Society, in spite of the separation from it of numerous special associations, of which that founded by v. Leyden as the Verein für innere Medizin was the first, has still remained the central point of scientific medical activity in Berlin, and almost every Berlin physician considers it his duty to belong to it, so that at present it has more than 1,600 members. As a result of the participation of the university teachers, the scientific proceedings are always valuable and a number of important discoveries have been presented here for the first time. As successors of v. Gräfe, Bernhardt von Langenbeck, Rudolf Virchow, Ernst v. Bergmann, and finally H. Senator have held the office of president. Robert Koch, Helmholtz and Pasteur were made honorary members, a distinction which has seldom been bestowed. On the occasion of the semicentennial the number of honorary members was considerably increased, including in addition to two living members of the society, two physicians practicing in Berlin, Professor Waldeyer and the surgeon general of the Prussian army, v. Schjerning, Naunyn (Baden-Baden), Exner and Fuchs (Vienna), Golgi, Armauer-Hansen (Christiania), Abraham Jacobi (New York), Fr. Koranyi (Budapest), Keen (Philadelphia), Kitasato (Tokio), Laveran (Paris), Lépine (Lyons), Lister, Murri (Bologna), Pawlow (St. Petersburg), Ramon y Cajal (Madrid), Retzius (Stockholm), Salomonsen (Copenhagen), and Röntgen (Munich). Senator was elected honorary president. On the festival day it was announced that so far $15,000 (63,000 marks) had been subscribed by the members for the building of the projected Virchow House which is to be the special home of the society. The widow of Virchow on the same occasion announced that she would make over to the new building the private collections and valuable memorials of Virchow.

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In 1909 there were 406 injuries of human beings in Prussia by rabid animals or those suspected to be rabid. The greatest number occurred as formerly in the eastern provinces, in those districts which touch the Russian boundary to the greatest extent. The wounds were inflicted mostly by dogs, but to far less extent by cats, horses, cattle and deer. Nineteen persons received wounds while tending two hydrophobic patients; 252 of the wounds were inflicted by animals which were certainly rabid; 374 of the wounded received the Pasteur inoculation in Berlin and Breslau. Of the 374 inoculated, eight died (2.13 per cent.). Of the thirty-two who were not inoculated, two died (6.25 per cent.); the latter were included among the twenty-two persons who were bitten by animals certainly rabid, which gives a mortality of 9.1 per cent.

Communication of Typhoid by Butter and Cheese

Professor Gaffky, director of the institute for infectious diseases, in a report to the minister of education, states that there are no published accounts of the transmission of typhoid by butter and cheese. Theoretically it may be said that according to previously published investigations, typhoid bacilli may remain viable in artificially infected butter from 21 to 27 days and that they pass for the most part into the cream that is used for butter when separated by the centrifuge. In the curd obtained from milk (cheese made from sweet milk), the bacilli added to the milk are found, but they are rapidly killed by the acids that form in the curd, so that they cannot be demonstrated after the third day. Gaffky therefore comes to the conclusion that butter made from sour cream, the curds from sour milk, and matured cheese are not likely to communicate typhoid. To avoid communication by butter from sweet cream and cheese made from the same material, pasteurization of the milk is to be recommended, since a temperature of 60 C. is sufficient to kill the typhoid bacilli in milk and does not affect the preparation or the taste of the products made from it.

Carbohydrates in the Diet of Children

At the last session of the German pediatric society, Professor Langstein, head physician of the Augusta Victoria institute for prevention of infant mortality, made an interesting address on the rôle of carbohydrates in infant-feeding. The nutrition of the healthy child is to be sharply distinguished from that of the sick child. For the improvement of artificial nutrition, it is necessary to determine the healthy infant's absolute requirement of carbohydrates. For the artificial nutrition of the healthy child, no other viewpoint is appropriate except to furnish in a volume which as nearly as possible corresponds to the natural, as much nourishment as the law of energy requires for infants. The natural flour suffices for the nutrition of healthy infants and it is not necessary to employ flour prepared for infants. Overfeeding with sugar, even if there are no alarming symptoms referable to the gastro-intestinal tract, appears to be capable of leading to severe injury of the child's organism. Exclusive nourishment with flour, if long continued, may lead to severe disturbances of nutrition. Disproportionate nourishment with flour appears to lead to a chemical degeneration of the organism that involves a loss of immunity. In the proper amount the carbohydrates are indispensable for the treatment of disturbances of nutrition in infants. The enrichment of the diet by carbohydrates is of the greatest importance in the so-called milk-diet diseases (*Milchnährschaden*). The importance of carbohydrates in these cases is due to the fact that they hinder the formation of soaps in the intestine. The various carbohydrates behave quite differently in reference to this power. Milk-sugar is the carbohydrate which is least adapted to the child whose nutrition is disturbed. Cane sugar appears more efficient in these cases. The best combination seems to be that of flour and malted preparations. A complete loss of tolerance for carbohydrates is incompatible with the continuance of life.

Statistics of Physicians in the German Empire

In the period from 1885-1907, while the population of the German Empire increased 32 per cent. (from 46,700,000 to 61,700,000), the number of physicians increased 102 per cent. (from 15,764 to 31,864). The percentage increase of physicians is thus more than three times as great as that of t
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Nursing-Bottles with Tubes

Dr. Savary, inspector of public charities, draws attention to a regrettable omission in the law recently passed (The Journal Oct. 1, 1910, p. 1211) which prohibits [illegible] on sale, the exhibition and importation of [illegible] tubes. Their use, however, has not been expressly prohibited, so that the inspectors of the public charities have no recourse against the nurses who persist in the old ways. The pharmacists have ceased to sell such apparatus, but the nurses who want to use the tube nursing-bottles because of the freedom which it leaves them make the apparatus themselves. A medical inspector, on a tour of inspection, saw several nursing-bottles with tubes made by nurses, and once found two babies, one of which had hereditary syphilis, in the same cradle sucking from a nursing-bottle with two tubes which the nurse had arranged. The nipples were frequently exchanged. Such facts show how important it is to amend the present law.

Death of Dr. Armand Trousseau

Dr. Armand Trousseau, head physician of the clinic of the Hospice des Quinze-Vingts and of the Rothschild ophthalmologic institution, has just died, aged 54, from an automobile accident. Dr. Trousseau was born in Paris in 1856. He was formerly an intern of the hospitals and specialized from the beginning of his career in diseases of the eye. In 1886 he entered the clinic of the Hospice des Quinze-Vingts, becoming head physician three years later. Having been called to attend Baron Adolphe de Rothschild, he advised the great banker to found the institution which bears his name. Baron de Rothschild in his will appointed Dr. Trousseau to direct this foundation. Dr. Trousseau was the grandson of the famous clinician who died in 1867.

Diminution of Cases of Hydrophobia

Dr. Maurice Letulle, *agrégé* professor at the Paris medical college, during the last session of the Council of Hygiene and Salubrity, made a report on hydrophobia during the period from 1904 to 1909, setting forth the success obtained in the prophylaxis of rabies. While in Paris and the Department of the Seine, the number of biting animals remains about the same from one year to another, the proportion of animals in which hydrophobia has been recognized is continually and rapidly decreasing. While 474 animals were affected with hydrophobia in 1902, there were only 172 in 1904, 120 in 1905, 74 in 1906, 46 in 1907, 55 in 1908, and 13 in 1909. Of all animals the one most to be feared is the dog. In 1909, of 1,903 biting animals there were 833 dogs, 247 horses, 6 cats and 7 miscellaneous. Cases of hydrophobia are more frequent in the suburbs than in Paris, since in the six years studied, Paris has had only 211 cases, while the suburbs have had 249. It is at the Pasteur Institute, especially, that the progress of the prophylaxis of hydrophobia can be estimated. From 1904 to 1909 the number of persons bitten in the Department of the Seine amounted to 7,576, of whom 307 were bitten by animals known to be mad (183 in the suburbs and 124 in Paris). The number bitten by rabid animals was about 87 in 1904, and about 90 in 1905. It has progressively decreased to 65 in 1906, 35 in 1907, 24 in 1908, and 6 in 1909. Out of the 1,069 individuals cared for since 1904, fortunately there has been only one fatal case, which occurred in 1904. This was the last victim of the scourge in the region of Paris. Within six years only two cases of hydrophobia have been found in more than 68,000 stray dogs captured at the Fourrière (establishment where stray and abandoned dogs are received). Previously there was an average of 26 a year (155 from 1898 to 1903). Human hydrophobia, which caused twenty-two deaths as late as 1885, and twelve in 1901, has caused none for five years.

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Dangers of Poppy Decoctions

The employment of decoctions of the poppy-head as a soporific is very general in certain parts of France, especially in the north. Recently, near Lille, the physician who had made out the death certificate of an infant of 4 months refused to permit the burial without an inquest because he attributed the death to poisoning by poppy heads. The grandmother confessed that within 8 days the child had absorbed an infusion of three poppy heads in 1 liter (about a quart) of water. The autopsy showed no disease which might account for the death, but did disclose some signs of habitual opium intoxication, and on chemical analysis the viscera were found to contain a toxic quantity of morphin In reporting the case at the last session of the Société de médecine légale, Dr Dutilleul and M Bonn a chemist remarked that it was strange that while morphin and the other alkaloids of opium are among the poisonous substances which the pharmacist can deliver only on receipt of a medical prescription the substance from which these alkaloids are obtained is freely sold, not only by pharmacists, but by grocers, seedsmen and herb dealers A check on the sale of poppy heads would prevent the death of many children each year

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Sleeping-Sickness

A discussion of the etiology and treatment of sleeping-sickness was held in the third Deutsche Kolonialkongress and the fourth International Congress for the Care of the Insane which are now in session in Berlin. At the first-named meeting, in the division on tropical medicine and tropical hygiene, the surgeon-general of the defense corps of the imperial colonial office, Professor Steudel, made a thorough report on the spread of sleeping-sickness. An increased spread of this disease, which had been known for more than a hundred years, was first noticed in the last decade of the last century in Angola on the Congo and finally on Victoria Lake. On Victoria Lake in German East Africa there are two foci, one in the district Bukoba with about a thousand patients. A wider spread is not to be feared as the tsetse fly is lacking in this district. The second focus is in the district of Schirati, close to the English border which has 800 or 1,000 patients. A limit to the further spread of the disease has also been surely established here through the extensive labors of sanitarians. At the third and largest [illegible] focus in German East Africa to the north o[illegible] the number of patients amounts to several thousand. The extermination of disease in this focus will require a great deal of work. In Kamerun single cases of sleeping-sickness have been repeatedly observed in the government hospital from the neighborhood of Duala; but no distinct focus of the disease could be found. In Togo there is a very old focus of sleeping-sickness, chiefly on the boundary river Volta. It appears that the disease in this old focus follows in general a milder course and shows less tendency to an epidemic character than on the Congo and in German East Africa. So far about 230 patients have been found. Dr. Hoffmann of Berlin gave his views of the etiology of sleeping-sickness. While some other possibilities of transmission are not entirely excluded, transmission by the bite of the fly *Glossina palpalis* is the only mode of importance for the epidemic spread of the disease. It has been shown that human beings may harbor infectious trypanosomes in the blood for as long as a year without signs of illness. These people are dangerous carriers and probably play the predominant rôle in the spread of the disease, as new flies may constantly receive the germs of the disease from them and spread them. In severely infected districts, half or two-thirds of the population are infected in this way and become carriers. The knowledge of the cause of the disease has already led to a well-planned and successful attack on this pest and promises to be still further successful. Privy-Councillor Uhlenhuth of Berlin described the treatment of sleeping-sickness. Arsenical preparations are of greatest importance.

The first successful treatment was inaugurated by the introduction of atoxyl by Thomas of Liverpool in 1905. Atoxyl is to-day at the center of medical interest. According to Uhlenhuth, atoxyl acts on the cells of the body and the leukocytes which produce substances which destroy the trypanosomes and prevent their multiplication. The knowledge of the action of atoxyl, regarding which opinions are not yet entirely clear, will be of great service in the search for new remedies. As Dr. Meixner says, the campaign against sleeping-sickness will be carried out on the lines laid down by R. Koch being directed against trypanosomes circulating in the blood and the flies which convey the disease. For the first purpose the patients must be collected at central stations, of which there are at present ten in the German colonies. From the beginning, under the supervision of nine physicians and sixteen sanitary assistants, 6,167 patients with sleeping-sickness have been treated. Ambulant treatment, as well as hospital treatment, has been extensively carried out. A large part is played by sanitary measures, consisting in trimming out the brush and cutting down the reeds, by which means the sensitive flies are destroyed. In addition the capture of flies and the destruction of crocodiles which form the sources of food for the flies are recommended. The natives, moreover, are transported to places free from these flies. Control of traffic and similar measures which hinder the spread of the disease are useful. Complete success is to be expected only after some years, but the results, especially of sanitary measures, are so far very satisfactory.

At the congress for the care of the insane Ehrlich delivered an address on his studies in the treatment of sleeping-sickness which was received with great interest. The similarity between paralysis and sleeping-sickness depends on the fact that the exciting causes of the two are similar in many respects and are influenced by the same remedy, and this influence is only a very partial one. Koch first succeeded by use of atoxyl, but the blindness arising from atoxyl in certain cases must be taken into account. A greater disadvantage of the atoxyl treatment is the fact that in only 10 per cent. of cases does a permanent cure result. Ehrlich tried to better these results by forming arsenic preparations which would act on the chemoceptor of the parasites without affecting the cells. This was effected by arsenophenylglycin, but great difficulties are experienced in the treatment of sleeping-sickness in this way because the response of parasites in various localities to treatment is not entirely uniform. While those in Togo are easily influenced by arsenicals, those at Kamerun and on the Congo are affected with difficulty; and while the patients on the Togo and the Congo are slightly susceptible to arsenic, those in East Africa are very susceptible, and, besides, the negroes resort to treatment too late. The changes in the spinal fluid are important for prognosis; and of greater importance is the fact that the races of trypanosomes which appear in relapses are biologically of different kind from the original and form different antibodies which do not prevent new infection and the number of th[illegible] large. A discontinuous treatment [illegible] has not been successful because a [illegible] parasite set in and symptoms of arsenic poisoning appeared, symptoms which are less prominent with "606." With the treatment styled by Ehrlich *therapia magna sterilisans*, by which the germ of the disease is supposed to be killed at one stroke, there are only three possibilities: (1) a fraction of the dose which can be tolerated is used and healing secured; or (2) very large doses, which may be dangerous, must be used, or (3) even these dangerous doses fail. In Togo a *sterilisatio magna* could be secured with doses which in East Africa did not result in a cure, and still endangered life, while in Leopoldville on the Congo, this amount would not produce a cure and yet was not dangerous to life.

As Ehrlich had taken these possibilities into consideration he brought his reserves into the fight against the trypanosomes by combining trypanred with the arsenic treatment. By this combined attack which had already been successful in animal experimentation, a cure was obtained which has already in some cases lasted for eight months. The similarity of paralysis and of sleeping-sickness is also shown in the fact that both are very difficult to influence if the germs have already invaded the spinal fluid, because the endothelium of the spinal meninges hinders the passage into this fluid of remedies with high molecular weight. The discovery of new remedies with greater penetrating power will assist in the solution of the problem of curing sleeping-sickness and paralysis. Ehrlich hopes to attain this solution with the assistance of psychiatrists. Professor Mott of London, director of the institute for sleeping-sickness in the English colonies, exhibited numerous instructive microscopic preparations which very distinctly showed the changes in the brain and in the lymph-vessels. Mott regards sleeping-sickness merely as a clinical phase of a general trypanosome infection, which manifests itself in the brain as a perivascular infiltration in the course of the brain vessels. For that reason he would like to see the name "sleeping-sickness" changed to "human trypanosomiasis." He also calls attention to the fact that in all human beings the same trypanosomes are present and the same insect is a conveyor of the disease. In the discussion Régis of Bordeaux emphasized the fact that the clinical difference between paralysis and sleeping-sickness is only slight. Professor A. Marie of Paris showed with the lantern a series of sleeping-sickness patients in the various stages of the disease and exhibited with the cinematograph living and moving trypanosomes and the spirochetes of chicken spirillosis, of syphilis and of relapsing fever.

BUDAPEST LETTER

Budapest, Oct. 22, 1910.

The Re-Inoculation of Persons Repeatedly Bitten by a Rabid Animal

Sometimes a person previously bitten and inoculated against rabies is again bitten by a mad dog. The question naturally arises whether inoculation should be done *de novo*, or whether it is superfluous? The same question presents itself also in regard to small-pox.

Before giving an answer to this very important question we must decide, said Professor Tangl in an address delivered before the Budapest Medical Society, whether the artificially produced immunity lasts for life or lapses after a certain time. In the latter case, obviously, a fresh inoculation is required. Jenner himself held the opinion that immunity once produced against small-pox infection lasted for life. Therefore he advised inoculation being performed in the first year of life. But experience has taught that the immunity disappears after a certain time; and a formerly protected person in a fresh small-pox epidemic easily contracts the disease anew, though in a milder form. For decades science was unable to clear up this question, because observations were taken only from statistics. Nowadays, experimental observations enable similar questions to be settled more quickly. We know, for example, that the immunity afforded by variola lasts about ten years. According to Haffkine, the immunity against plague commences within eight days of inoculation and lasts about as many months. It is important to know also the relations of the immunity produced against rabies.

The only information on this subject comes to us from Paris and from the Budapest Pasteur Institute. Pasteur kept his immune dogs under observation for many years. From time to time he tested their immunity against a lethal dose of the rabies virus. The immune dogs, when injected intraocularly with rabies virus, did not develop the disease, but the control dogs similarly infected with the same virus became mad. Pasteur mentions in one of his publications that in a certain dog immunity lasted at least 5 years.

A Prayer for Doctors and Nurses

BY WALTER RAUSCHENBUSCH

We praise thee, O God, for our friends, the doctors and nurses, who seek the healing of our bodies. We bless thee for their gentleness and patience, for their knowledge and skill. We remember the hours of our suffering when they brought relief, and the days of our fear and anguish at the bedside of our dear ones, when they came as ministers of thee. May we reward their fidelity and devotion by our loving gratitude, and do thou uphold them by the satisfaction of work well done.

¶ *We rejoice in the tireless daring with which some are now tracking the great slayers of mankind by the white light of science. Grant that under their teaching we may grapple with the sins which have ever dealt death to the race, and that we may so order the life of our communities that none may be doomed to an untimely death for lack of the simple gifts which thou hast given in abundance. Make thou our doctors the prophets and soldiers of thy kingdom, which is the reign of cleanliness and self-restraint and the dominion of health and joyous life.*

¶ *In their whole profession, strengthen the consciousness that their calling is holy and that they too are disciples of the saving Christ. May they never through the pressure of need or ambition surrender the sense of a divine mission and become hirelings who serve only for money. Make them doubly faithful in the service of the poor who need their help most sorely and may the children of the workingman be as precious to them as the children of the rich. Though they deal with the frail body of man, may they have an abiding sense of the eternal value of the life residing in it, that by the call of faith and hope they may summon to their aid the powers of thy all-pervading life.*

—*American Magazine, November, 1910.*

In 1892 Dr. Högyes, late professor of general pathology in the University of Budapest, published an article dealing with the question of the duration of immunity. He described his observations on eight immune dogs, on which Dr. Tangl repeated the test injections with rabies virus, after days, months, and after several years. The average result was that after the antirabic inoculation the immunity developed in a very short time (in one case after seven days) and lasted from four to seven years. A dog which was inoculated on Jan. 20, 1898, resisted the test-infection perfectly in February, 1901, so that it was absolutely immune after three years, even against the strongest virus. On July 31, 1907, i. e., after nine and a half years, it was again inoculated with rabies virus, but this time it became infected, and died on Aug. 27, 1907, with symptoms of paralytic rabies. A hare inoculated on the same day with the virus taken from the brain of the dead dog died after three days' illness on Sept. 27, 1907. The immunity, therefore, still existed after three years, but came to an end some time between three and nine and a half years. Another dog had the antirabic inoculations on Jan. 27, 1898. In 1901 Dr. Tangl found the dog absolutely immune. On Oct. 25, 1903, it died, with mild symptoms of rabies, confirmed by inoculation of a hare with the virus taken from the dog's brain. This dog, then, which after thirty-two months proved to be immune had lost its immunity after 5 years and 4 months.

So far these are the only experimental data bearing on the duration of immunity in the literature of the subject. From the results of these two experiments it appears that the average duration of immunity is between three and five years. Naturally individual factors play a certain rôle in this connection, because after two or three years all the eight dogs examined proved to be immune; we are therefore at liberty to suppose that the average limit of immunity may even exceed four years.

Up to the present time we have no data to indicate how far these facts hold good for human beings.

On account of the close relationship which exists between human and animal (particularly dog) rabies, both in the occurrence of the symptoms and in its course, we are justified in supposing that the process of immunity is analogous in men and dogs, and that, as Professor Högyes stated fifteen years ago, in all probability the immunity against rabies in man also expires after a certain time. Tangl concludes, therefore, that in the event of fresh bites by a mad dog revaccination is advisable in every instance, and is superfluous only when the fresh bite occurs at a very short interval after the previous antirabic inoculation.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Oct. 26, 1910.

Abundance of Congresses on Food and Nourishment

Vienna, or rather Austria, has witnessed this year quite an unusual series of scientific congresses, which had some bearing on medicine. Apart from the physiologists [The Journal, October 29, p. 1570] there was a congress of the balneologists. of those engaged in the refrigerating industry, and of those engaged in hunting and cattle feeding. Some points of interest to members of our profession were brought out. Thus, in the hunting congress, held in the Grand Hunting and Sports Exhibition in Vienna, a few weeks ago, the question of the failing meat-supply for our cities, with its consequences of rise in price of that article, was referred to in several papers. The possibility of furnishing ample meat-supplies from the forests of our country was shown, as there are sufficient stocks of hares, pheasants, partridges, roe and other venison, if only the population could be induced to form the habit of using them. Rabbits are hardly known here as food, while in France they are eaten in enormous quantities. The rapid industrialization of this country requires the supply of cheap nitrogenous and albumin-containing food. Fish were also shown to be a very good and cheap food for our country, if only popular prejudices were dispersed. From a medical point of view, this lecture was most useful, and in combination with another lecture, that on modern methods of freezing meat, it will form a starting-point for the modern provisioning of Vienna.

The scarcity of meat, or rather its high price, has called forth here the cry for frozen meat from Argentina. The quality of such food has been questioned, but the congress had opportunity to show that sound meat could be made to keep for months in a frozen state without the least injurious effect on the consumer. In the same manner, eggs, milk, fish and butter could be brought over and thus increase the regular intake by the individual of the requirements of a hard-working life.

This will, of course, be very important for the practitioner; for since tuberculosis is so frequent in the poorer classes of this city, cheap food will mean better chances of recuperation of many of his patients.

Marriages

James M. Marsh, M.D., to Miss May Bell Knight, both of Elkhorn, Wis., October 6.

Dwight Mackey, M.D., to Miss Ruth Bullock, both of Hobart, Ind., November 2.

Gael M. Adair, M.D., Anita, Iowa, to Miss Lela J. Hutton of Atlantic, Iowa, November 2.

Peter George Woods, M.D., Versailles, Mo., to Mrs. Osborn of High Point, Mo., October 26.

Elmer Hill, M.D., Huntsville, Wash., to Miss Bertha Dinsmore of Troy, Kan., October 26.

Frank S. Marnell, M.D., to Miss Fay Forbes, both of Nebraska City, Neb., November 4.

Charles Scudder Pool, M.D., to Miss Adelaide Chauncey, both of Brooklyn, N. Y., November 3.

Paul Frederick Straub, M.D., U. S. Army, to Miss Susan Olinger, at Dubuque, Iowa, November 3.

Walter E. Wright, M.D., Tulsa, Okla., to Miss Katherine Griggsby of Bardstown, Ky., November 1.

Jerome T. Quirk, M.D., New York City, to Miss Anne Darlington, at New York City, October 22.

Francis Marion Shook, M.D., U. S. Navy, to Mrs. Cornelia Gordon Upham; at New York City, November 3.

Oscar Hunter McClung, M.D., Fairfield, Va., to Miss Eugenia Harman of Richmond, Va., November 2.

Paul P. Allen, M.D., Chambersburg, Pa., to Miss Gertrude Wheeler of Germantown, Philadelphia, October 27.

Carl D. Chapell, M.D., Flint, Mich., to Miss Elizabeth M. Carroll of New Orleans, at Flint, November 2.

Thomas Joseph Norton, M.D., Pittsfield, Mass., to Miss Teresa Manning of Worcester, Mass., November 15.

George Torance Crosbie, M.D., Belle Vernon, Pa., to Miss Anna Mae Myers of North Charleroi, Pa., October 26.

George Canning Wankel, M.D., Deerfield, N. Y., to Miss Adelaide Pelletier of Bloomingdale, N. Y., October 27.

Peter Aloysius Slattery, M.D., White Earth, Minn., to Miss Nelley Evelyn Utman of Minneapolis, October 9.

Edward Melverton Trainor, M.D., Stanley, N. Dak., to Miss Lillian Victour Landquist of Minneapolis, October 25.

George W. Pugsley, M.D., Panama, Iowa, to Miss Grace Thomas of Plattsmouth, Neb., at Daykin, Neb., October 26.

William H. McBean, M.D., Los Angeles, to Anna M. Gutzwiller, M.D., of Eldridge, Cal., at Los Angeles, October 19.

James Bourke, M.D., U. S. Army, to Miss Josephine Margaret Ott of Leavenworth, Kan., at Jefferson City, Mo., November 3.

Charles Milton Murrell, M.D., Elida, N. Mex., to Miss Clara Loraine Rademacher of Clinton, Iowa, at Savanna, Ill., October 26.

Deaths

John Marshall Allen, M.D. St. Louis Medical College, 1854; a member, and in 1899 third vice-president of the American Medical Association; died at his home in Liberty, Mo., November 1, from pneumonia, aged 77. Dr. Allen represented Clay County in the legislature in 1884 and 1885; served throughout the Civil War in the State Guard of Missouri and the Confederate service as brigade surgeon and finally as chief surgeon of the district of Mississippi and Louisiana. He was one of the organizers and professor of diseases of the abdomen in the University Medical College of Kansas City, and later president of the college.

Adrian Snydam Polhemus, M.D. Bellevue Hospital Medical College, 1882; major and surgeon, U. S. Army, retired; died in Portland, Ore., October 28, from nephritis, aged 53. He was appointed an assistant surgeon in the Army in December, 1883, and was promoted to captain in 1888. During the war with Spain he served as brigade surgeon of volunteers; was promoted to major and surgeon in the regular establishment in 1901, and was retired on account of disability in line of duty, December 5, 1904.

Edgar Henry Douglas, M.D. Dartmouth Medical School, Hanover, N. H., 1890; of Little Falls, N. Y.; a member of the American Medical Association and of the New York and New England Association of Railway Surgeons; formerly mayor and health officer of Little Falls; local surgeon of the New York Central Railroad, and a member of the Board of U. S. Pension Examiners, and of the staff of the Little Falls Hospital; died in the Utica Hospital, October 29, from cholelithiasis, aged 43.

Michael Brown Van Buskirk, M.D. University of Pennsylvania, Philadelphia, 1866; of Aurora, N. Y.; a member of the Medical Society of the State of New York; formerly health officer of Ledyard, N. Y.; a veteran of the Civil War; a member of the New York legislature in 1884 and 1885; died at the home of his daughter in New York City, October 31, from arteriosclerosis, aged 70.

Anselm D. Price, M.D. University of Louisville, 1865; a member of the American Medical Association, and a member of the House of Delegates from Kentucky; formerly president of the Kentucky State Medical Society; medical referee for Mercer County and a member of the county board of health for several years; died at his home in Harrodsburg, November 11, from nephritis, aged 70.

Addison Julius Tanner, M.D. New York University, New York City, 1894; of Meriden; a member of the Connecticut State Medical Society; vice-president of the Meriden City Medical Association; for several years town physician; while crossing an electric railway track in Berlin, Conn., in his automobile, October 29, was struck by a car and instantly killed, aged 40.

Edward Holman Hamill, M.D. New York University, New York City; 1869; consulting medical director of the Prudential Insurance Company, Newark, N. J.; a Confederate veteran; at one time president of the Association of Life Insurance Medical Directors of America; died at his home in Chatham, N. J., October 30, aged 66.

Walter E. Delabarre, M.D. New York Homeopathic Medical College, New York City, 1891; formerly of New York City; assistant surgeon of the New York Ophthalmic Hospital; medical director of Rosemont Springs Sanitarium, White Plains, N. Y.; died at his home in White Plains, October 30, from interstitial nephritis, aged 52.

John Edwin Allen, M.D. Bellevue Medical College, 1875; for twenty-five years connected with the department of health of New York City; at one time professor of anatomy in his alma mater; for twenty years surgeon of the Seventy-First Infantry, N. G., N. Y., died at his home in New York City, October 25, from nephritis, aged 63.

James D. MacGaughey, M.D. Jefferson Medical College, 1870; a member of the American Medical Association; a member of the Connecticut State Legislature in 1880, and for nine years medical examiner and registrar of vital statistics of Wallingford; died at his home, October 31, from bronchopneumonia, aged 62.

William Richard Hobbs, M.D. Detroit College of Medicine, 1893; a member of the Nebraska State Medical Association; of Omaha; an eye, ear, nose and throat specialist of Omaha; and surgeon to the Douglas County and Swedish Mission Hospitals; died at his old home in Guelph, Ont., October 17, aged 49.

Louis Marshall, M.D. Medical College of Ohio, Cincinnati, 1904; a member of the Kentucky State Medical Association; of Washington, Ky.; health officer and a member of the board of health of Mason County, Ky.; died in Fort Worth, Texas, November 2, from hemorrhage of the lungs, aged 37.

Thomas V. B. Embree, M.D. Willamette University, Salem, Ore., 1882; a pioneer physician of Polk County, Ore., and commander of the Oregon Indian War Veterans on account of service in the Yakima Indian War of 1855 and 1856; died at his home in Dallas, October 26, from nephritis, aged 74.

William F. Scott, M.D. Transylvania University, Lexington, 1850; of Somerset; surgeon in the Federal service during the Civil War, and at one time superintendent of the Eastern Kentucky Hospital for the Insane, Lexington; died in the Somerset Sanitarium, October 26, from senile debility, aged 91.

Harris Burton Lochhead, M.D. Jefferson Medical College, Philadelphia, 1902; a member of the Medical Society of the State of Pennsylvania; of Pittston, Pa.; a member of the staff of the Pittston Hospital; died in the White Plains, N. Y., Hospital, October 25, aged 35.

John Campbell Flynn, M.D. Pulte Medical College, Cincinnati, 1879; Cincinnati College of Medicine and Surgery, 1886; health officer of Warren village and township, Macomb County, Mich.; died at his home in Warren, October 15, from chronic gastritis, aged 60.

Nelson G. Coffin, M.D. Medical College of Ohio, Cincinnati, 1847; Illinois Army Board, 1862; assistant surgeon of the One Hundredth and Seventh Illinois Volunteer Infantry during the Civil War; died at his home in Monticello, Ill., November 1, aged 90.

William Wilberforce Baldwin, M.D. Long Island College Hospital, Brooklyn, N. Y., 1876; for more than twenty-five years a practitioner of Rome and Florence, Italy; died at the family home in Great Bend, Pa., October 17, from cerebral hemorrhage, aged 60.

George Austin Bowen, M.D. New York University, New York City, 1863; for several terms a member of the Connecticut legislature; surgeon-general of the state in 1895 and 1896; died at his home in Woodstock, October 30, from nephritis, aged 69.

Garrett Beverly Blackwell, M.D. Eclectic Medical Institute, Cincinnati, 1885; of Scotts Mills, Ore.; while apparently asleep on a railway track between Woodburn and Hubbard, Ore., September 6, was struck by a train and instantly killed, aged 55.

John B. Stevens (license, New Hampshire, 1897); for many years a practitioner of Lowell, Mass., and surgeon of the Thirteenth New Hampshire Volunteer Infantry during the Civil War; died at his home in Merrill, N. H., May 8, 1909, aged 77.

John M. B. Rogers, M.D. College of Physicians and Surgeons, Baltimore, 1877; of Ellicott City; a member of the Medical and Chirurgical Faculty of Maryland; died at the home of his sister in Govans, Md., October 31, from typhoid fever, aged 62.

Samuel H. Friend, M.D. University of Pennsylvania, Philadelphia, 1888; formerly a member of the American Medical Association; a member of the State Medical Society of Wisconsin; died at his home in Milwaukee, October 30, aged 48.

Rufus O. Snider, M.D. Trinity Medical College, Toronto, Ont., 1896; of Toronto; who was injured in a collision between his automobile and a street car a year ago, was found dead in bed, September 16, from cerebral hemorrhage, aged 45.

Joseph Lacy Brayshaw, M.D. College of Physicians and Surgeons, Baltimore, 1888; of Friendship, Md., a member of the Medical and Chirurgical Faculty of Maryland; died in Sibley Hospital, Washington, D. C., October 30, aged 55.

William Henry Meyers, M.D. Philadelphia University of Medicine and Surgery, 1861; for many years surgeon of the Baltimore and Ohio Railroad, at Myersdale, Pa.; died at his home in that place, October 30, from diabetes, aged 70.

William James Telfer, M.D. McGill University, Montreal, 1890; a member of the Montreal Medico-Chirurgical Society; and demonstrator of chemistry in his alma mater; died recently in Burgoyne, Que., aged 46.

Alexander C. Harlan, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1886; formerly of McCook, Neb.; a veteran of the Civil War; died at the home of his niece near Hillsboro, Iowa, October 23, aged 67.

William Perry Baird, M.D. University of Michigan, Ann Arbor, 1858; acting assistant surgeon in the Navy during the Civil War; died at his home in Northboro, Mass., September 10, from angina pectoris, aged 80.

Joseph Frank Geenan, M.D. Rush Medical College, 1893; formerly of Toluca, Ill.; for four years coroner of Marshall County; died at his home in Beloit, Kan., October 20, from disease of the kidney, aged 42.

Samuel W. Edmonds, M.D. University of Michigan, Ann Arbor, 1868; of Alexander, Ill.; a veteran of the Civil War; died in Passavant Hospital, Jacksonville, November 2, from typhoid fever, aged 70.

Robert Dunlop, M.D. Hospital College of Medicine, Louisville, 1884; for many years physician to the Little Sisters of the Poor; died at his home in Louisville, November 9, from uremia, aged 57.

Gilbert Potter Bennett, M.D. Hahnemann Medical College, Chicago, 1881; formerly of Sedalia, Mo., and San Bernardino, Cal.; a veteran of the Civil War; died at his home, October 18, aged 80.

P. A. Gastonguay, M.D. Laval University, Quebec, 1904; of Quebec; while canoeing on the Jacques Cartier River, near St. Catherine, Que., October 9, was drowned by the upsetting of his canoe.

Norman McLeod Carter, M.D. College of Physicians and Surgeons, New York City, 1904; of Huntington, L. I.; died at Saranac Lake, N. Y., November 2, from tuberculosis, aged 34.

Oliver Cromwell Kirby, M.D. College of Physicians and Surgeons, Chicago, 1909; of Avondale, Chicago; died in the University Hospital, Chicago, October 29, from typhoid fever, aged 25.

Robert Swepson Sims, M.D. Missouri Medical College, St. Louis, 1883; formerly of Fruitland, Texas; died at his home in Fayetteville, Ark., January 1, from gastric ulcer, aged 69.

Ernest Stuart Albee, M.D. Rush Medical College, 1900; a member of the State Medical Society of Wisconsin; died at his home in Oshkosh, November 1, from nephritis, aged 34.

David Sanford Watson, M.D. Reform Medical College of Georgia, Macon, 1860; a Confederate veteran; died at his home near Anderson, S. C., April 19, 1909, aged 79.

Benjamin Russell Walker (license, Iowa, years of practice, 1886); of Decatur County, Iowa; died in the County House, Leon, Dec. 21, 1909, from arteriosclerosis, aged 80.

William Thomas Hutchins, M.D. Memphis (Tenn.) Hospital Medical College, 1889; died at his home in Gulfport, Miss., September 24, from cirrhosis of the liver, aged 51.

Royal E. Cochrane, M.D. University of Buffalo, N. Y., 1872; a veteran of the Civil War; died at his home in Penfield, N. Y., October 22, from angina pectoris, aged 66.

David N. Fansler, M.D. University of Wooster, Medical Department, Cleveland, 1874; died at his home in Marion, Ind., September 5, from senile debility, aged 80.

Lewis William Krieger, M.D. Jefferson Medical College, 1892; of Peoria, Ill.; died at St. Francis Hospital in that city, October 23, from cerebral hemorrhage, aged 51.

James Edgar Wall, M.D. University of Lousiville, 1880; for four years health officer of Panola County; died at his home in Carthage, Texas, October 22, aged 53.

John P. Cloyd, M.D. Rush Medical College, 1869; of Georgetown, Ill.; died at the home of his daughter in that place, October 29, from senile debility, aged 72.

Eady Stevenson, M.D. Cleveland University of Medicine and Surgery, 1859; M.R.C.P. and S., Ontario, 1879; of Vancouver, B. C.; died recently.

Frederick W. Neal, M.D. Rush Medical College, 1891; died at his home in Grand Rapids, Mich., May 27, from sarcoma of the hip, aged 43.

Charles Henry Shepard, M.D. New York Medical College, New York City, 1859; died at his home in Brooklyn, N. Y., October 29, aged 85.

Emma M. Linden, M.D. Willamette University, Salem, 1899; died at her home in Portland, Ore., October 25, aged 52.

Correspondence

Practical Demonstration of the Dangers of Optometry

To the Editor:—Knowing the active interest of the Association in the wide-spread agitation for laws licensing opticians to examine for refractile errors and prescribe glasses, I have thought that a striking instance of the dangers of this proceeding which has just come to my notice might well be recorded. A man of 34 consulted me this week because of a severe and increasing headache of three months' duration. Three weeks ago he went to one of the large opticians of New York because of some trouble with his eyesight, and had glasses prescribed for him by an optometrist. He did not have a refractile error of consequence, but a high grade of choked disc in both eyes and was suffering from brain tumor. Of course, a decompression operation three weeks ago would have preserved much more sight than can be expected now, and the blame for the loss of this valuable time is to be placed wholly on the legal recognition of optometrists, which was given in New York State last winter.

The optometry question is in my opinion but one phase of a larger problem which must eventually be settled rightly in this country, but which we can scarcely expect to have so settled until general education in the fundamental facts of physiology and pathology is much more wide-spread, and perhaps not until our therapeutic resources become more comparable with our diagnostic ones. No person, whether he styles himself optometrist, osteopath, mental healer, or any other sectarian name, should be recognized by law as competent to treat disease until he has been thoroughly trained in the science of diagnosis. This, for every specialty, no matter how small, demands, as a minimum training, the present course of instruction in the whole of medicine required of candidates for license as physicians. No part of the human body can be arbitrarily separated from its vital connection with the whole organism. The sooner the public recognizes this fact the better.

THEODORE C. JANEWAY, New York.

Hexamethylenamin in Pellagra

To the Editor:—In THE JOURNAL, November 5, p. 1663, Dr. Bagby discusses the hexamethylenamin treatment of pellagra I have used the same remedy in two cases, giving a dose of 5 grains three times a day. The progress of each patient, while not nearly so remarkable as in Dr. Bagby's case, was very satisfactory. A week ago, however, one of them, who had had an organic heart lesion for years, died suddenly while talking to some friends. This patient had so far recovered as to be able to work half a day at a time. The other patient is improving rapidly. The arsenic treatment has been kept up, and I have been doubtful whether the improvement was due to the hexamethylenamin, the arsenic, or the time of the year, or to these three combined. I began the hexamethylenamin at the suggestion of Dr. Manfred Call of Richmond, who has, I think, been using it for several months.

WALTER E. VEST, Meherrin, Va.

Chinosol—A Correction

To the Editor:—In an article by Dr. Wilbur E. Post and myself on "The Comparative Efficiency of Some Common Germicides" which appeared in THE JOURNAL, Nov. 5, 1910, the value of chinosol as a germicide was the subject of criticism. Since the publication of the article, my attention has been called to the fact that chinosol is no longer advertised as a germicide nor has it been since the Council on Pharmacy and Chemistry proved to the satisfaction of its manufacturer that, while it possessed antiseptic powers, its germicidal action was practically nil Our criticisms of this preparation, therefore, were without foundation Chinosol was examined by us because at the time our experiments were made this product was advertised and sold as a germicide. In publishing the results of our work reference to chinosol should, of course, have been omitted.

HOMER K. NICOLL, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request.

PLANS FOR HOSPITALS

To the Editor:—I desire information regarding the size, cost of building and arrangement of a hospital in a small city. Articles have been published in THE JOURNAL on this subject. Please give me the dates

WILLIAM F. ROSS, New Kensington, Pa.

ANSWER.—The following original articles and abstracts have appeared in THE JOURNAL:

Adams, H P: Construction of Cottage Hospitals, *Brit. Med. Jour*, June 20, 1908; abstr. in THE JOURNAL, July 18, 1908, p 261.

Ochsner, A. J: Practical Points of Economy in Hospital Construction, THE JOURNAL, Sept. 21, 1907, p 990.

Sturm, M J., Planning and Construction of Hospitals for Smaller Cities and Towns, THE JOURNAL, Feb. 20, 1909, p. 610; Construction of Hospitals for Tuberculosis, *Tr. Internat. Cong. on Tuberc*, 1908; abstr in THE JOURNAL, Oct 3, 1908, p 1174.

Thompson, W G.: Modern Hospital Construction, THE JOURNAL, Sept 21, 1907, p. 993.

Holmes, Bayard: The Hospital Problem, THE JOURNAL, Aug 4, 1906, p 318; A Suggestive Plan for a Modern General Metropolitan Hospital of Five Hundred Beds, THE JOURNAL, March 28, 1908, p 1025

The following books and articles also may be found of assistance:

Galton Healthy Hospitals, Oxford University Press, 91 Fifth Ave, New York $2.75

Ochsner and Sturm: Organization, Construction and Management of Hospitals, Cleveland Press, Chicago. $7.

Aikens, Charlotte A: Some Common Blunders in Hospital Construction, *Nat. Hosp Rec*, 1907, x, 16

Berlhach, P H: Natural versus Mechanical Ventilation of Hospitals, *Mil Surg.*, 1907, xx, 199.

Goldwater, S S: Cost of Modern Hospitals, *New York Med Rec.*, Oct 14, 1905

Goodrich, Annie W.: Some Common Points of Weakness in Hospital Construction, *Am. Jour Nursing*, 1903-4, iv, 93

Hucker, A B.: Notes on the Requirements of Modern Hospital Architecture, *St Paul Med. Jour.*, February, 1904.

McMullen, B. H: Small Hospitals for Small Places, *Jour. Michigan Med Soc.*, July, 1908

Ochsner, A J., Hospital Construction in American Cities and Towns, *Cincinnati Lancet-Clinic*, Nov. 12, 1904; Hospital Construction, *Illinois Med Jour*, October, 1908

Simpson, W J. Infectious Hospitals, *Jour. State Med*, London, 1903, xi, 521; Plans for a Model Modern Hospital, *Nat. Hosp. Rec*, 1907, x, 10

Smith, G. A: Application of the Cottage System to the New Hospitals, *Mil Surg*, 1907, xx, 199

Vander Veer, Albert: The Essentials of Modern Hospital Construction, *Albany Med Ann*, July, 1902

SWELLING OF NOSE AND UPPER LIP

To the Editor:—I have a patient, a woman, aged about 35, in good health, who yet has marked swelling of nose and upper lip every morning This goes down slightly toward evening and appears again in the morning There is scarcely any redness of the skin I have examined all the organs and find no cause for the phenomenon I have tried various treatments with no effect. The only symptom is the swelling Probably you could suggest some line of treatment

INQUIRER.

ANSWER—It would be impossible to give intelligent advice without knowing more about the case Is the condition due to some error in diet, to derangement of digestion from other causes, to some medicine the patient may be taking, to some condition of sleeping apartment, to late supper, to anemia, to malaria, to angioneurotic edema, etc? It would not be safe in such a case to accept as final the statement that the patient is in good health.

The Public Service

Medical Department, U. S. Army

Changes during the week ended Nov 12, 1910

Mason, George E, D S, Nov 1, left Fort Snelling, Minn, en route to Fort Lincoln, N D, for temporary duty

Leslie, Samuel H, D S, Oct 27, reported for temporary duty at Fort Robinson, Neb

Stallman, George E, D S, Nov. 2, reported for temporary duty at Fort McIntosh, Texas

Ford Clyde S, major, Nov 1, reported for temporary duty at Fort Yellowstone, Wyo

Wilcox Charles, major, Nov 3, relieved from duty at Fort Totten, N Y., and ordered to Fort Sheridan, Ill, for duty.

Dougherty, James C, M R C, Nov 3, granted two months' leave of absence

Cutliffe, William O, M R C, Nov 3, ordered to Walter Reed General Hospital, Takoma Park, D C, for observation and treatment

Church, James R, major, Nov 5, relieved from duty at Fort Ontario, N Y, and ordered to Fort Williams, Me, for duty

Miller Edgar W, captain, Nov 5, relieved from duty at Fort Williams Me, and ordered to Fort Ontario, N Y, for duty

Bartlett, C J, captain, Nov 5, granted twenty one days' leave of absence

Shaw, Henry A major, Nov 7, granted leave of absence to include Dec 5 1910

Bernheim, J R, D S, Nov 8, granted two months' leave of absence on arrival at San Francisco

Perley Harry O, colonel, Nov 3, left Denver on thirty days' leave of absence

Crabtree George H captain, Nov 4, reports on forty two days' leave of absence from Culebra Canal Zone

Sherwood, J W, M R C, Nov 9, reported for temporary duty at Fort Andrews, Mass

Bannister, John M, colonel, Nov 9, on his own application is retired from active service on Dec 31, 1910, after more than thirty one years' service

Porter, Ralph S, captain, Nov 9, granted four months' leave of absence

Hereford, John R, M R C, Nov 10, granted leave of absence for one month and twenty days

McKinney, Garfield L, lieutenant Nov 9, on arrival at San Francisco will report to commanding officer, Army General Hospital, at that place, for duty

Medical Corps, U. S. Navy

Changes during the week ended Nov 12, 1910

Green, E H, medical director detached from command of the naval hospital, New York, and ordered to duty at the naval recruiting station New York

Gatewood, J D, medical inspector, ordered to duty as president of the naval examining and naval medical examining boards, at the naval medical school, Washington, D C

Byrnes, J C, medical inspector, detached from command of the naval hospital, Newport, R I, and ordered to command the naval hospital, New York

Diehl, O, medical inspector, ordered to command the naval hospital, Newport, R I

Farenholt, A, surgeon, detached from the *California* and ordered to command the naval hospital, Puget Sound Wash

Morris, L, surgeon, ordered to the naval medical supply depot, New York

Parker E G, surgeon, detached from the *South Dakota* and ordered home to await orders

Shipp, E M, surgeon detached from duty as president of the naval examining and naval medical examining boards at the naval medical school, Washington, D C, and ordered to continue other duties

Vickery, E A, passed asst surgeon, detached from the *Solace* and ordered to the *Maryland*

Dollard H L, passed asst surgeon detached from the naval hospital, Mare Island, Cal, and ordered to the navy recruiting station, Kansas City, Mo

May, H A, passed asst surgeon, detached from the bureau of medicine and surgery, Navy Department, and ordered to duty at the naval hospital, Las Animas, Colo

Eytinge, E O J, passed asst surgeon, detached from the naval hospital, Norfolk, Va, and ordered to the *South Dakota*

Baker, M W, passed asst surgeon, ordered to duty at the naval hospital, New York

Camerer, C B, asst surgeon detached from the naval hospital, Las Animas, Colo and ordered to the *California*

Thompson F W, asst surgeon, detached from the navy recruiting station, Kansas City, Mo, and ordered to the *Montgomery*

Bunker C W O, asst surgeon, detached from the *Montgomery* and ordered to duty at the naval hospital, Mare Island Cal

Garrison, H A, asst surgeon, ordered to duty at the naval hospital, Norfolk Va

Taylor J L, passed asst surgeon detached from the naval hospital, Las Animas Colo and ordered to duty at the naval hospital, Naval Home, Philadelphia

Guest, M S, surgeon, detached from command of the naval hospital, Pensacola, Fla, and ordered to continue other duties

Seaman, W, surgeon detached from the navy recruiting station, New York, and ordered to command the naval hospital, Pensacola, Fla

Dykes, J R, passed asst surgeon, ordered to duty at the Naval Medical School Hospital, Washington, D C

Woodward J S, passed asst surgeon, detached from the *Birmingham* and ordered home to await orders

Brooks, F H, passed asst surgeon, detached from the navy recruiting station, Omaha, and ordered to the *Birmingham*

Straeten, R J, passed asst surgeon, detached from the naval proving ground, Indian Head, Md, and ordered to the navy recruiting station, Omaha

Higgins, M E, asst. surgeon, ordered to the naval proving ground, Indian Head, Md

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Nov 9, 1910

Mead, Frank W, surgeon on being relieved by Surgeon J. B Stoner, directed to proceed to Vineyard Haven, Mass, and assume command

Carrington, Paul M, surgeon, relieved from duty at San Diego Cal, and directed to proceed to Port Townsend, Wash, and assume command

McIntosh, W P, surgeon, bureau order dated Oct 27, 1910, detailing him as chairman of board to examine officer of Revenue Cutter Service, revoked.

Stoner, James B, surgeon, on being relieved by Surgeon P M. Carrington, directed to proceed to Savannah, Ga, and assume command

Guiteras, G M, surgeon, on being relieved by Passed Assistant Surgeon R H von Ezdorf, directed to proceed to Galveston, Texas, and assume charge

Oakley James H, surgeon on being relieved by Passed Assistant Surgeon B H Earle, directed to proceed to Philadelphia and report to Surgeon W G Stimpson for duty in the medical examination of arriving aliens

Wickes Henry W surgeon relieved from duty at New Orleans and directed to proceed to Cairo, Ill and assume command

Clark, Taliaferro, P A surgeon, relieved from duty at Philadelphia and directed to proceed to Evansville, Ind, and assume command

Von Ezdorf R H P A surgeon, relieved from duty at New Orleans Quarantine Station, and directed to proceed to Mobile and assume command

Moore, Dunlop P A surgeon detailed as chairman of board to examine officer of Revenue Cutter Service

Corput, G M P A surgeon relieved from duty at Galveston, Texas, and directed to proceed to New Orleans Quarantine Station and assume command

Goldberger, Joseph, P A surgeon, leave of absence for one month and 4 days from Sept 26, 1910, amended to read twenty six days from Sept 26 1910

Gwyn, M K P A surgeon detailed as recorder of board to examine officer of Revenue Cutter Service

Wilson Robert L, P A surgeon, on being relieved by Surgeon Henry W Wickes, directed to proceed to Charleston Quarantine Station and assume command

Earle, B H P A surgeon, on being relieved by Passed Assistant Surgeon R L Wilson directed to proceed to Port Townsend Quarantine Station and assume command

Lloyd B J, P A surgeon, relieved from duty at the Hygienic Laboratory, and directed to proceed to Seattle, Wash, and assume charge

McCoy, George W, P A surgeon, relieved from duty at San Francisco, and directed to proceed to Honolulu T H, and report to the Director of the Leprosy Investigation Station for duty

Chapin, C W, asst surgeon on being relieved by Passed Assistant Surgeon B J Lloyd, directed to proceed to San Francisco and report to Surgeon Rupert Blue for duty

Grimm, R M asst surgeon, on being relieved by Passed Assistant Surgeon Taliaferro Clark directed to proceed to Washington, D C and report to the Director of the Hygienic Laboratory for duty

Thompson, L R, assist surgeon, directed to proceed to Washington, D C, and report to the Director of the Hygienic Laboratory for temporary duty

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR JOHN H BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course]

Fourth Month—Second Weekly Meeting

ACQUIRED DEFORMITIES OF THE SPINE

Scoliosis

Etiology· Congenital or acquired, habitual or fixed deformity. Age and sex Faulty attitudes, occupations, unequal vision or hearing, torticollis, empyema, rickets, heart disease, etc

Symptoms 1 Postural or functional scoliosis Deformity, convexity of spine, shoulders, hips Effect of bending forward, of suspension. Location of convexity Results 2 Structural or fixed scoliosis. One or more curves, usual locations, prominences, depressions, rotation Effect of bending forward and of suspension Shoulders and hips General symptoms, pain, dyspnea, impaired health.

Treatment 1 Postural cases: hygiene, gymnastics, etc 2 Structural cases (a) Correct deformity by active exercises, by apparatus, jackets, etc, (b) retention of improved position

NON-TUBERCULOUS AFFECTIONS OF THE SPINE

Acute Osteomyelitis Etiology Symptoms. Treatment.

Syphilis of the Spine Diagnosis Treatment

Infectious Arthritis of the Spine: Typhoid Spine: Pathology, diagnosis Gonorrheal Spine: Diagnosis, treatment.

Rigidity of the Spine 1 Spondylitis deformans: Pathology; diagnosis 2 Chronic ankylosing inflammation of the spine· Etiology, pathology, clinical types 3 Muscular spinal rigidity. 4 Traumatic spinal rigidity.

State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, December 6-9. Sec., Dr. Charles L Tisdale, 929 Butler Bldg., San Francisco.

DELAWARE: Regular, Dover, December 13-15; Homeopathic, Wilmington, December 13-15. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.

KENTUCKY: Louisville, December 15-17. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: 1211 Cathedral St., Baltimore, December 13-16. Sec, Dr. J. McPherson Scott, Hagerstown.

OHIO: Cincinnati, December 6-8. Sec., Dr. George H. Matson, State House, Columbus.

PENNSYLVANIA: Regular and Homeopathic, Philadelphia, December 6-9; Eclectic, Harrisburg, December 6-9. Secretary of the Medical Council, Dr. Nathan C Schaeffer, Harrisburg.

TEXAS: Palestine, November 22-24. Sec., Dr. R. H. McLeod.

VIRGINIA: Lynchburg, Dec. 20-23. Sec., Dr. R. S. Martin, Stuart.

Preliminary Educational Requirement in Texas

The following communication has been received from Dr. *M. E. Daniel, Honey Grove, Texas, chairman of the college* and reciprocity committee of the Texas State Board of Medical Examiners:

"This is to notify prospective medical students and all concerned, that before matriculation in the medical colleges of Texas is permissible, it is necessary to procure an entrance certificate from the State Board of Medical Examiners. This means that the authorities of the several medical colleges no longer pass on the literary credentials of applicants for matriculation. This function is now exercised by the State Board of Medical Examiners.

"To be eligible for examination or reciprocity, all Texas students matriculating in other states since 1908, must comply with this requirement. Non-residents desiring matriculation are required to comply with this regulation whether they expect to take the state medical board examination or not. Texas medical colleges are required to matriculate resident and non-resident students on equal terms.

"Residents and non-residents alike, who comply with the entrance requirements in such states as have reciprocal relations with Texas, will be accepted for matriculation, examination or reciprocity, provided literary credentials are acted on and credits determined by the State Medical Examining Board or other legally designated authority independent of medical college authorities or faculties.

"Residents and non-residents matriculating in states other than reciprocal states, and who expect future legalization in Texas, must comply with this regulation, but matriculants of such of these states as maintain and enforce an educational standard equal to our own, will be accepted. But those matriculating in states which maintain no fixed literary prerequisite, where the college faculties have the sole prerogative of passing on and determining the literary qualifications of medical students, will be barred unless they possess an entrance certificate issued by this board or from some other state having reciprocal relations with Texas. It is not sufficient to possess the necessary literary credential with the view of submitting it after graduation; the required entrance certificate must be procured before matriculation.

"Texas now reciprocates with the following states: Arkansas, Missouri, Illinois, Indiana, Iowa, Michigan, Kentucky, Maine, Nebraska, Minnesota, District of Columbia, West Virginia, Virginia, Maryland, Wisconsin, Vermont, North Dakota, Ohio, New Jersey, Kansas and Nevada.

"Full particulars can be had by addressing the secretary of the board, Dr. R. H. McLeod, Palestine, Texas."

Arizona October Report

Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, October 3-4, 1910. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 4, of whom 3 passed and 1 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Tulane University of Louisiana	(1893)	75.2
Baltimore Medical College	(1906)	79.2
University of Pennsylvania	(1891)	75
FAILED		
Medical College of South Carolina	(1910)	71.2

Indiana Reciprocity Report

Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports that thirty-one candidates have been licensed through reciprocity from January 1, to October 15, 1910. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1901)	Illinois
Rush Medical College	(1906) (1908)	Illinois
Illinois Medical College	(1905)	Illinois
Coll. of Physicians and Surgeons, Chicago	(1907) (1908)	Illinois
Jenner Medical College	(1904)	Illinois
Northwestern University Med. School	(1906) (2, 1908)	Illinois
American College of Medicine and Surgery	(1903)	Illinois
American Medical Missionary College	(1902)	Kansas
Medical College of Indiana	(1907)	Colorado
Fort Wayne College of Medicine	(1882) (1886)	Ohio
University of Iowa, College of Medicine	(1898)	Iowa
Louisville Medical College	(1907)	Kentucky
University of Louisville	*(1903) (1908)*	*Kentucky*
Louisville and Hospital Medical College	(2, 1908)	Kentucky
Hospital College of Medicine, Louisville	(1900)	Kentucky
College of Physicians and Surgeons, Baltimore	(1896)	Virginia
Detroit College of Medicine	(1897)	Michigan
University of Michigan, Dept. of Med. and Surg.	(1908)	Michigan
Eclectic Medical University, Kansas City	(1906)	Missouri
Beaumont Hospital Medical College	(1900)	Kansas
Western Reserve University	(1908)	Ohio
Eclectic Medical College, Cincinnati	(1901)	Ohio
Vanderbilt University	(1896)	Kentucky
University of Tennessee	(1899)	Kentucky

Utah October Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, October 3-4, 1910. The number of subjects examined in was 22; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 10, all of whom passed. Seven candidates were licensed through reciprocity. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Northwestern University Medical School	(1910)	75.3
Rush Medical College	(1910)	80.4, 80.9
St. Louis University	(1910)	82
St. Louis College of Physicians and Surgeons	(1910)	75.1
Western Reserve University	(1910)	83.6
University of Pennsylvania	(1909)	77
Jefferson Medical College	(1909) 78.3; (1910)	80.9, 82.4

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1892)	Illinois
Northwestern University Medical School	(1909)	Illinois
Louisville and Hospital Medical College	(1908)	Kentucky
University of Michigan, Dept. of Med. and Surg.	(1889)	Michigan
Albany Medical College	(1898)	New York
Jefferson Medical College	(1865)	Kentucky
Victoria University, Ontario	(1865)	Michigan

Wisconsin October Report

Dr. John M. Beffel, secretary of the Wisconsin State Board of Medical Examiners, reports that at the meeting held at LaCrosse, October 6, 1910, nineteen candidates were licensed through reciprocity and one by examination. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago (1902) (2, 1903) (1908) Illinois	(1905)	Nebraska
Chicago College of Medicine and Surgery	(1909)	Illinois
Rush Medical College	(2, 1908)	Illinois
Northwestern University Medical School	(1907) (1909)	Illinois
Chicago Homeopathic Medical College	(1895)	Indiana
Medical College of Indiana	(1884)	Minnesota
University of Louisville	(1909)	Kentucky
University of Maryland	(1908)	Maryland
Johns Hopkins University	(1908)	Maryland
College of Physicians and Surgeons, Baltimore	(1900)	New York
University of Michigan, Dept. of Med. and Surg.	(1909)	Michigan
St. Louis University	(1909)	Illinois
Chattanooga Medical College	(1908)	Tennessee

LICENSED BY EXAMINATION

College	Year Grad.	Per Cent.
Marquette University	*(1909)*	78

Book Notices

AN INTRODUCTION TO THE STUDY OF HYPNOTISM, EXPERIMENTAL AND THERAPEUTIC. By H. E. Wingfield, M.A., M.D., B.C. Cantab., Consulting Physician Royal Hants County Hospital. Cloth. Price, $2. Pp. 175. New York: William Wood & Co., 1910.

A few years ago this little book would have been hailed with delight by both specialist and general practitioner. To-day, treatment by means of hypnosis is rarely resorted to by those best qualified to apply it. The great expectations attached to the study and practice of this fascinating method of treatment have failed of realization. The study of hypnotism has, nevertheless, been fruitful of results in the study and diagnosis of the neuroses. The entire field of psycho-analysis owes its revelations principally to hypnotism, though other methods have recently come into vogue. As a means of therapy hypnotism is but seldom practiced these days. Suggestion in the waking state, persuasion and mental reeducation have largely supplanted it. From the point of view of the therapeutist, the study of hypnotism has merely historical and educational values. For practical purposes, therefore, the book comes too late. To those who wish to begin the study of hypnotism the book can be recommended as a safe guide. The author is extremely conservative, has put forth no extravagant claims and has written a readable book. As stated by him in the preface, there is nothing new for those already familiar with the subject, but the book of about 175 pages is intended solely for those who as yet know nothing of hypnotism. To such inquirers it may prove of some service.

A TEXT-BOOK ON THE THERAPEUTIC ACTION OF LIGHT. Including the Rho Rays, Solar and Violet Rays, Electric Arc Light, The Light Cabinet. By Corydon E. Rogers, M.D. Cloth. Price, $3.50. Pp. 323, with illustrations. New York: C. E. Rogers, 382 Second Avenue, (1910).

This is a book which deals with the peculiar theories of the author in regard to the therapeutic action of certain rays of light which he calls "Rho" rays. The work hinges on "Rho" rays. But no adequate description of the "Rho" rays is given, and, in fact, no proof of any scientific value is furnished to establish their existence. In our humble opinion there are no such rays. The supposed rays are produced by a high candle-power incandescent lamp of the author's invention. This is an elaboration and an enlarged type of the therapeutic lamp with a parabolic or conical reflector of which the Rogers' therapeutic lamp of a few years ago (perhaps by the same inventor) was a type. The agent is recommended in almost all sorts of conditions from impetigo to optic atrophy. The work is entitled to no scientific consideration.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS. Or the Action of Drugs in Health and Disease. By Arthur R. Cushny, M.D., Professor of Pharmacology in the University of London. Fifth Edition. Cloth. Price, $3.75 net. Pp. 744, with 61 illustrations. Philadelphia: Lea & Febiger, 1910.

The necessity of a new edition of this text-book has led the author to make a thorough revision of the whole work. The decrease in the use of some of the minor remedies is noted and the space given to them is correspondingly reduced, some of them being entirely discarded. A chapter on antitoxins and their uses has been added. The investigations of recent years have made possible more positive statements regarding the action of some remedies and such groups as that of digitalis receive thorough treatment. New remedies receive appropriate notice. The new edition will continue to maintain the position of the work in the first rank among standard authorities on pharmacology.

THE IRON MUSE. By John C. Underwood. Cloth. Price, $1.25 net. Pp. 196. New York: G. P. Putnam's Sons, 1910.

A well named collection of virile verses. Here is a splendid thrill of vigorous combat with the world's various problems. Several of the poems have a medical bearing. "The Consulting Room" is a graphic picture from a layman's viewpoint. The cogent appeal in "The Real Thing," addressed to one who may think he is down and out, is a tonic, while, of quite another sort, "The Mirror" has a mystic tenderness, which by contrast with the majority of poems, shows the breadth of the author's feelings.

Medicolegal

Distinctions and Liabilities in Actions for Malpractice

The Court of Appeals of Kentucky says, in Randolph's Administrator vs. Snyder (129 S. W. R. 562), that William Randolph, a miner who had paid $1 a month for medical treatment for himself and family, first brought suit individually against the defendant physician for alleged refusal to come and treat his child, which had been badly burned and subsequently died. Then the said Randolph had himself appointed administrator of the child's estate and sought, by the amendment of his petition, to recover damages for the alleged negligent treatment of the case by the physician after he came and took charge of it.

If the physician made a contract with the plaintiff to treat him and his family, as alleged in the petition and amended petition, and simply broke the contract by refusing to come when sent for to undertake the case, the right of action would be simply for the breach of the contract, and there would be no right of action in tort, as it is called, which means for a wrongful act or alleged negligent treatment. But if the physician came and undertook the case, and, having undertaken it, was negligent in his treatment, then a cause of action in tort might be maintained for the non-performance of the duty which the law cast on him when he undertook to treat the case. The rule has often been applied in the case of innkeepers, carriers, attorneys, physicians, etc. They all rest on the same ground.

The plaintiff having finally elected to sue in tort must recover, if at all, on the latter ground. Moreover, while the administrator might recover for the pain and suffering of the child caused by the negligence of the physician, or for his death if caused thereby, he could not recover for both, and might be required to elect which he would sue for.

If an injury is inflicted by a physician negligently on his patient and death ensues therefrom he is liable for such death under the Kentucky statute, just as any other person would be whose negligence causes the death of another. Blackburn vs. Curd, 32 Ky. Law R. 789. In the case referred to the defendant operated on the patient, and then failed to give him the necessary treatment, by reason of which he died. It was held on those facts that the defendant was liable to the administrator of the patient's estate for the patient's death. In the case here before the court the physician did not operate on the child so far as was shown by the petition, but if he undertook to treat him, and negligently failed to give him proper treatment, this was an injury inflicted on him within the meaning of the statute, and if his death resulted from such negligence, the plaintiff might recover therefor. This case cannot be distinguished from the one cited. By section 6 of the Kentucky Statutes, which follows section 241 of the constitution, whenever the death of a person results from an injury inflicted by negligence or wrongful act, damages may be recovered therefor. The statute is remedial and should be liberally construed to effectuate its objects. The filing of the amended petition was in effect the bringing of a new suit, and an abandonment of the cause of action which had been stated in the original petition, and it should not have been allowed to be filed.

Releases Executed in Reliance on Statements made by Physicians

The Supreme Court of Minnesota holds, in the personal injury case of Nelson vs. Chicago & Northwestern Railroad Co. (126 N. W. R. 902), that a release of a claim for personal injuries, executed in reliance on fraudulent and false representations of probability of recovery, made to the injured person by an attending physician in the employ of persons sought to be charged therewith, is voidable. Such release may also be avoided when its execution is due to a mutual mistake of the injured person and of such a physician, who has assisted in procuring the settlement. The court says that the courts have generally viewed releases obtained by the physician, acting as assistant claim agent, with extreme suspicion, and in many cases in which the physician has acted in the dual capacity of claim agent and physician, or in which he has violated the proprieties of the situation and has expressed his opinion with reference to or in connection with a settlement then pending, the courts have avoided releases on the ground of mutual mistake, where subsequent experience has shown that the physician was in fact wrong. But it does not at all follow that in every case wherein there is a subsequent discovery of mutual mistake made by the defendant's physician as to the subsequent course of the plaintiff's injury, that a release executed after the mistake has been made is void. Into which class a particular case under consideration should properly fall must depend on its peculiar circumstances. Where an attending physician in the course of treatment expresses a mistaken, but honest, opinion as to the period within which the injured person, suffering from a known injury, would recover, and where that expression of opinion, when made had no connection whatever with a settlement or with negotiations for a settlement, a release executed in reliance on his statement, may in certain cases properly be held valid.

Society Proceedings

COMING MEETINGS

Hawaiian Territorial Med. Assn., Honolulu, November 26-28.
Southern Surg. and Gyn. Assn., Nashville, Dec. 13-15.
Western Surg. and Gyn. Assn., Chicago, Dec. 19-20.

MINNESOTA STATE MEDICAL ASSOCIATION

Annual Meeting held at Minneapolis, Oct. 6-7, 1910

The President, Dr. W. A. Jones, Minneapolis, in the Chair

Address of the President: The State Medical Association and Its Relationship to the Problems of the Day

Dr. W. A. Jones, Minneapolis: The first problem suggested for consideration is how to secure a live interest and discussion on the yearly program. The men in the country are either over-modest or indifferent, and the burden of preparing papers falls on a few men from the chief cities in the state. The man in the country is often a man of ideas gleaned from hard earned experience and worked out without assistance, and the busiest man is the man who usually finds time for literary work outside of the hours devoted to practice.

Another problem is suggested by the inability of medical men, organized into associations or societies, to secure the creation of a national department of health. This is an illustration of the need of further systematic effort to impress legislators and congressmen with the necessity of safeguarding the public health. The opposition to this movement is composed of a cosmopolitan crowd, who fear restraint or loss of their illegal means of livelihood by the manufacture and sale of fraudulent remedies, nostrums or appliances. It is further supplemented by narrow minded people, who through ignorance or superstition exploit the new fads and cults incidental to the century, including opposition to vaccination, vivisection and other methods of advancing scientific information. The national and local League of Medical Freedom, supported by a few sensational newspapers is striving to arouse public sentiment against medical sanitary and hygienic progress. In spite of this opposition, a campaign of education by medical men must go on relentlessly. Much good has already been accomplished by the exposure of fraudulent remedies and fakers, who live on the misfortunes of the sick. The greatest difficulty is to get this information before the laymen. Physicians know of these frauds, but cannot always present proofs to their patients. The only remedy lies in the education of the masses to separate the good from the bad.

I strongly urge the employment of a journalist, who will acquaint himself with the fundamental needs of the people as advocated by physicians, and who will use his journalistic attainments and become a medical press agent. As physicians, we must learn to attend strictly to our own professional work and suspend personal abuse of fakers and newspapers until we have the confidence of the people and the press. Legislators should enact laws for the protection of the sick against cults, charlatans and nostrums. Indecisive fear on the part of the law maker is responsible for the present unenviable condition that so widely prevails.

All departments in the state which have to do with public health measures should be asked to send representatives to confer with a legislative committee composed of representatives from the state medical association, the board of health, the university alumni and the sanitary conference. The members of the Minnesota State Medical Association should take more active interest in and familiarize themselves with the work of the state hospitals and institutions. The medical school of the state university deserves the support of all of Minnesota's medical men.

Case of Metastatic Gonorrheal Conjunctivitis

Dr. William R. Murray, Minneapolis. This was a case of a simultaneous bilateral conjunctivitis occurring in a patient the subject of gonorrhea. There was no involvement of the intraocular structures. The lids were considerably swollen, there was a moderate conjunctival discharge, the bulbar conjunctiva was edematous, and an arthritis of the wrist joint accompanied the conjunctivitis. The first attack of conjunctivitis lasted ten days and subsided and after an interval of several days was followed by a second attack of conjunctivitis, involving both eyes, which was also attended by an arthritis. There was no intraocular involvement during either attack of conjunctivitis. No gonococci could be found in the conjunctival discharge. A diagnosis of the metastatic origin of a gonorrheal conjunctivitis is based on the bilateral involvement of the eyes, moderate amount of discharge, slight swelling of the lids, chemosis of the bulbar conjunctiva, comparative mild course of the disease, tendency to recur, absence of gonococci in the conjunctival discharge, and evidence of a systemic gonorrhea.

Dr. C. D. Conkey, Duluth: The case reported by Dr. Murray must have been of a metastatic nature, for microscopic examinations of the eye secretions were frequently made all through the attack without discovery of gonococci. The method of infection is probably by the direct entrance of the gonococci into the blood stream from the urethral tract. I have under my care at present a case of gonorrheal iritis with an arthritis of the right knee in which I administered three injections, two of 25 000 000 and one of 50 000 000 gonococci. The larger dose was followed by a decided reaction, the malaise lasting for several days, the joint affection being decidedly bettered, but no effect was produced on the inflamed eye.

The Heart in Diseases of the Thyroid

Dr. J. S. Gilfillan, St. Paul: That a relationship existed between the thyroid and the heart has long been known. The credit, however, for bringing the subject prominently before the profession belongs to Professor Rose who, in 1877, read before the German Surgical Congress a paper in which he established the influence of tracheal obstruction on the right heart.

Since a paper in 1899 by Professor Kraus it has been generally conceded that, aside from any respiratory obstruction, the thyroid may produce cardiac changes through certain toxic influences. Goiter heart may be classified as mechanical, or Rose's heart, and toxic, or the goiter heart of Kraus.

The symptoms of the mechanical variety are those of dilatation and insufficiency of the right heart in addition to those of tracheal obstruction. This form of cardiac disease is not peculiar to goiter but may be produced by pressure by any tumor.

The type of heart described by Kraus is produced by the altered or increased secretion of the thyroid acting on the regulatory mechanism. This may occur in any form of goiter. Symptoms consist in strong and rapid heart action, with at times other evidences of hyperthyroidism. In many cases there is enlargement of the left ventricle, which can be seen with the fluoroscope to be due to an increased diastolic distention Kraus tries to draw a distinct line between these cases and Basedow's disease. Kocher includes in the same class all cases presenting symptoms of thyroid intoxication Cardiac symptoms are very common in goiter patients Monnier found 25 per cent showing distinct heart symptoms Kocher calls attention to the fact that during or after the administration of iodin in any form for goiter, symptoms of thyroid intoxication may develop, due to hypersecretion of the gland stimulated by the iodin In goiter heart the ordinary heart remedies are of but little value Iodin should be used with great care if at all Toxic cases may be treated with rest, diet, sodium phosphate, etc but here as in mechanical cases operation should not be too long deferred.

Intraspinal Injections of Magnesium Sulphate in Tetanus

Dr Carl J. Holman, Mankato Two cases of tetanus were treated by magnesium sulphate injection One came on nine or ten days after a crushing injury to the ring and middle fingers of the left hand, necessitating amputation The symptoms of tetanus developed about the tenth day and the patient was given two doses of magnesium sulphate into the spinal canal, dying four hours after the last dose Case 2 was an appendiceal abscess The patient developed tetanus on the eleventh or twelfth day after the operation and received in all twenty-five doses of magnesium sulphate into the spinal canal He made a good recovery and is now well, performing farm labor.

(To be continued)

IDAHO STATE MEDICAL ASSOCIATION

Eighteenth Annual Meeting, Held at Boise, Oct 6 7, 1910

The President, Dr John M Taylor, Boise, in the Chair

Hon J T Pence, Mayor of Boise, made an address of welcome, which was responded to by Dr J. L Stewart of Boise

Officers Elected

The following officers were elected for the ensuing year president, Dr John W Givens, Orofino, vice president, Dr George O A Kellogg, Nampa, chairman committee on arrangements, Dr J W Gue, Caldwell, chairman committee on legislation, Dr J M Taylor, Boise, chairman committee on nominations, Dr J C Woodward, Fayette, chairman committee on public health, Dr G H Coulthard, Idaho Falls, trustees for *Northwest Medicine*, Dr R L Nourse, Boise (reelected), Dr J W Givens, Orofino (reelected), and Dr W T Drysdale, New Plymouth, delegate to American Medical Association, Dr A A Higgs, Boise, alternate, Dr C L Dutton, Meridian

Boise was selected as the place of the next meeting.

President's Address Principles in Etiology and Treatment of Disease

Dr John M Taylor, Boise, read his annual address on the above subject

DISCUSSION

Dr W T Williamson, Portland The profession has done much in developing the study of medical subjects among the laity Public education along the lines of personal hygiene and unhealthful habits is of great importance Physicians must reach the young through the teachers in the schools A competent member of the profession should be in attendance at all gatherings of teachers and lose no opportunity of instilling these thoughts into their minds

Dr George E Hyde, Rexburg It is evident to all that we are getting away from the era of superstition, medicine, through education, is less a mystery.

Spinal Anesthesia

Dr C C Snyder, Salt Lake City I have confined the use of spinal anesthesia to cases in which a general anesthetic was unsuitable With the use of strychnin and atropin in connection with the spinal injections, there seemed to be less headache and nausea following I prefer tropacocain to other cocain preparations, but it does not act so well above the diaphragm as does the hydrochlorate of cocain In my experience the chief contra indication to spinal anesthesia is a possible idiosyncrasy to the drug

DISCUSSION

Dr A E Rockey, Portland In a series of 25 or 30 cases in which I used cocain, I had 2 cases of anuria Subsequently I used tropacocain in about an equal number of cases, and found it to be safer, but it did not seem so active as an anesthetic

Surgery of the Large Intestines

Dr A E Rockey, Portland, read this paper

DISCUSSION

Dr E K Scott, Boise Very few cases of malignant disease of the lower bowel are seen early enough to justify resection I have seen many such operations, and know of but one case in which satisfactory results followed resection for malignant disease In spite of the objectionable features of colotomy, I prefer to advise it in advanced cases In treatment of colitis, irrigations and local treatment through the rectum can be done more easily and with the same good results as Dr Rockey reports from appendicostomy

Dr J L Stewart, Boise I have done several resections for malignant disease of large bowel, I agree with Dr Scott in believing that resection in these cases, unless the growth is low down, is not usually satisfactory

Dr J M Taylor, Boise Which incision does Dr Rockey consider most advantageous, and would ptosis of the abdominal organs complicate the operation?

Dr A E Rockey, Portland The remarks of Dr Scott refer more to the older methods of operating By the newer methods, posterior incision, removal of coccyx, etc, I have found it easy to get room for removal of the tumor and to bring the bowel down Prolapse of the sigmoid does not complicate the technic, if anything, it makes it easier I have been using the transverse incision for some time in all appendectomies, and only through accident discovered its advantages in exposing the large bowel

Important Facts Concerning Myopia in Children

Dr Edward E Maxey, Boise, read this paper.

DISCUSSION

Dr R L Nourse, Boise Myopia is one of the penalties of civilization Aborigines are not myopic Students and those who apply their eyes closely for near work are apt to become myopic Unless astigmatic, low degrees of myopia do not need glasses for comfort, as is often the case in low degrees of hyperopia, hence they are often undetected until fairly well advanced

Dr W T Williamson, Portland There are a considerable number of nervous conditions caused by errors of refraction, especially in school children For various reasons, school inspection is of vital importance to the child, especially inspection into the condition of the eyes, and, it is needless to say, these examinations should be made by competent men and repeated at frequent intervals

Dr E Van Note, Boise In the examination of children's eyes we should emphasize the tendency myopia has of progressing, as very few parents understand its seriousness

Dr J W Givens, Orofino In almost all forms of insanity very little help is to be had by correcting defects of vision However, the relation of errors of refraction to headaches should be constantly kept in mind in treating mental conditions

Dr E E Maxey, Boise Children of myopic parents are predisposed to myopia Such children, after they reach the school age, should be examined once or twice a year Low degrees of myopia, especially if astigmatic, should be fully corrected and glasses changed as often as necessary. All examinations and reexaminations should be made under a reliable mydriatic, preferably atropin If the myopia is progressing in spite of proper glasses, the child should be taken out of school and near work materially curtailed or prohibited entirely.

Application of Modern Methods in the Early Diagnosis of Pulmonary Tuberculosis

Dr. Ray W. Matson, Portland: A continuous afternoon fever is always suspicious of tuberculosis, and I have invariably found a material rise in temperature after exercise which was a little higher and remained longer than in the absence of tuberculosis. The tuberculin test in the human being is exactly the same and just as reliable as it is in cattle. Both von Pirquet's and the subcutaneous methods of using tuberculin give a positive reaction in the presence of an active or a healed lesion, while the eye test, being less sensitive, gives a positive reaction only when an active lesion is present. Therefore if the physical examination, the *x*-ray and laboratory findings lead us to believe that an active lesion is present, the tuberculin test should be applied by either von Pirquet's method (preferably) or subcutaneously. In all my examinations, the physical and laboratory findings are invariably controlled by *x*-ray examination.

DISCUSSION

Dr. R. C. Faust, Deary: Recently I heard of a new sign of incipient tuberculosis, *viz.*, that if the temperature be taken before and after examining the patient we would find a rise of from 1 to 1.5 degrees F. at the conclusion of the examination, but I am not prepared to express an opinion as to the value of this sign.

Dr. J. M. Taylor, Boise: The early diagnosis of this condition depends in a great measure on the experience and delicate technic of the examiner.

The Recent Epidemic of Infantile Paralysis

Dr. W. T. Williamson, Portland, delivered an extemporaneous talk more particularly to the laity, many of whom were present to hear him.

While the disease has been known to exist for the last forty years, it is only within three years, or even one year, that much has been learned about it. That the cause is a living organism is positive, but it is so small that it has not yet been discovered by the microscope. Experiments have been made on various animals, the only two responding to injections of blood containing the poisons of this disease being sheep and monkeys, the former in a very mild degree, while the latter proved so susceptible that many experiments have been made on them, but nothing definite by way of a solution has yet resulted, the inoculation in some instances, but not all, making the animal immune. The early symptoms presented marked differences from other infectious diseases; three symptoms which usually accompanied the disease are increased perspiration in children, great sensitiveness to touch, and change in the number of white blood cells. As remedies for the disease may be suggested calomel followed by hot water enemas, and hot external applications for the pain. I would advise against allowing a child suffering from this disease to lie on the back, as this position is apt to aid in producing congestion of the spinal cord and thus may increase the severity of the resulting paralysis. While we can not yet cure the disease, we can do much in preventing deformity. Treatments should be kept up for years, if necessary, and by so doing much of the deformity, if not all, can be eliminated. Rest both during and after the disease must be insisted on in order to prevent paralysis.

DISCUSSION

Dr. Ralph Falk, Boise, secretary of the State Board of Health: The Board of Health has thought it advisable to consider this disease of sufficient virulence to require reporting and quarantine, and the length of quarantine has been fixed at three weeks. By the end of this month there will probably be at least 100 cases of this mysterious disease reported in Idaho, 57 cases having already been reported. Most of these cases are in Idaho County, and they have been investigated personally by Dr. Hyde, president of the board.

Dr. George E. Hyde, Rexburg, president of the State Board of Health: In investigating the cases in Idaho County, I found most among the Germans. In from 60 to 70 per cent. of the cases, obstinate constipation was present, and the acute symptoms almost invariably subsided on removing the constipation. Fourteen of the cases were abortive, 5 patients died, and 30 per cent. developed paralysis in the left leg, these usually recovering. The disease occurs during the hot, dry season, the dust apparently irritating the nasopharyngeal mucous membranes and thus enabling the virus to enter the system. The period of incubation is from four to sixteen days. I have been able to determine that 14 of the patients contracted the disease by direct infection, while in 12 cases the infectious material had been carried by a third person. As prophylactic measures, the board has recommended quarantine for 3 weeks and the frequent use of antiseptic washes for the nose and mouth.

Dr. C. F. Eikenbary, Spokane, Wash.: There could hardly be any doubt as to the contagious nature of this disease, yet we find occasional sporadic cases. In this recent epidemic, it seemed that the child was sick longer than usual before paralysis developed, and this would seem to suggest the possible prevention of paralysis. It is important to prevent deformity of paralyzed limbs by the use of splints.

[The splint or brace mentioned by Dr. Eikenbary is made of stockinette or some such woven material, saturated with celluloid. The celluloid is prepared by dissolving small pieces of celluloid in commercial acetone until a solution the consistency of mucilage is obtained. A plaster cast is made of the limb or part of the body where the splint or brace is to be worn. When this is prepared, the stockinette is stretched over the cast and plastered with the celluloid paste, then another layer of stockinette is added plastered with celluloid paste, and so on until the desired thickness is obtained. To prevent curling and wrinkling, the splint is left on the cast for one week or until thoroughly dry. The splint is then cut from the cast, trimmed to desired shape and size, and the edges bound to make them smooth.]

Dr. J. W. Givens, Orofino: Climatic and atmospheric conditions have much to do in lowering the vitality of children. Children should not be exposed unnecessarily. They should be kept off the damp ground or grass in the evenings. As an intestinal cleansing agent, the old fashioned Epsom salts are excellent, given in small doses three times a day.

Dr. J. A. Pettit, Portland: Our greatest work should be along the line of investigating and determining the cause. The nasal theory appears to me to be rather overdrawn. The brain is not affected in infantile paralysis at all, yet if the infection gains entrance through the nasal mucous membrane one would naturally expect extension by continuity of tissues to the brain or its membranes. The spinal cord is affected and the paralysis shows that the diseased condition never extends higher than the motor cells of the fourth ventricle.

Dr. L. P. McCalla, Boise: The profession should use greater moderation in discussing this disease, and consider the evil effects of unnecessarily alarming the public. The fear and dread of this disease is worse on the mothers of children than the disease itself. Many of these so-called abortive cases are not infantile paralysis at all, but cases of auto-intoxication due to gastro-intestinal disturbances. But granting that all of the cases reported are infantile paralysis, the disease is no more severe than whooping cough, and we do not think that serious enough either to report or to quarantine. The disease may be infectious but it is not proved to be contagious, and I think that the profession should frown down the newspaper notoriety recently given to this disease.

Dr. Ray W. Matson, Portland: Predisposition to disease in general is a probable important factor in the causation of this disease. The germs of various diseases are constantly present in the mouths and noses of most of us, but being more or less immune to these organisms we are not affected by them. We have not yet been able to determine the specific organism of infantile paralysis because the organism of this disease is what we term ultramicroscopic, like that of scarlet fever, and, therefore, invisible to present methods of examination.

DR. W. T. DRYSDALE, New Plymouth: In view of the extensive publicity given this disease and the doubtful prognosis in the cases reported, the State Board of Health should be commended for the position it has taken in the matter of quarantine.

DR. E. VAN NOTE, Boise: Some diseases increase in virulence, while others decrease, as in the case of small-pox. Have we the same old active poliomyelitis, or is it less active; and, if less active, will it remain so? Flexner's experiments seem to show that the virulence of this disease is increased by transmission in the monkey, so we may have the disease worse than now, and it is our duty to watch for this increase in virulence.

DR. G. E. HYDE, Rexburg: I do not believe in scaring people over trivial matters, but the condition existing in Idaho County, where in one district 10 per cent. of the children are ill with this disease, is no longer a trivial matter.

MR. EDGAR WILSON, Boise: From a layman's point of view, and from my experience as a member of school boards, I would like to endorse the remarks made by Dr. McCalla. I regret the tendency of newspapers to "scare-head" these health conditions. It can do no good, and often does a real harm. Public health matters are and have been very well handled.

DR. C. L. DUTTON, Meridian: It is not impossible for this condition to be due to more than a single specific infection. The state board is right in trying to prevent extension of this disease.

DR. W. T. WILLIAMSON, Portland: It is easy to believe that we have been having sporadic cases of this disease, caused by some different form of infection, but these are probably not due to the same cause as the epidemic cases. Flies, mosquitoes, and other insects, are possible carriers of the disease. The treatment must be begun early, for if the disease is allowed to progress we soon have what might be called "an organized disorganization," producing permanent lesions. The tendency of epidemics is to regress or diminish in severity, and we are not justified in expecting an increase in virulence of this disease simply because inoculation of monkeys produced a disease of increased virulence. It is hard to collect evidence of the contagiousness of a disease when we do not know the cause. Therefore, we should uphold the health boards in the matter of quarantine, until such time as we can determine the true specific cause.

Surgical Treatment of Cancer of the Prostate

DR. GEORGE S. WHITESIDE, Portland, read this article.

DISCUSSION

DR. A. A. HIGGS, Gooding: Early diagnosis is of importance in these cases if operation is to be of any value. If a case is at all suspicious of cancer, the patient should be referred early to a competent specialist for diagnosis and treatment.

DR. A. E. ROCKEY, Portland: I have done Young's operation for cancer and think it a splendid method, but I prefer to combine it with suprapubic incision. In most simple enucleations of prostate I prefer the suprapubic route.

DR. G. WHITESIDE, Portland: Suprapubic incision is not necessary, as the bladder is very easily brought forward. Hemorrhage is not a prominent symptom in early cancer. If present it is frequently due to irritation from catheterization. Success of operation depends on attention to thorough asepsis, both before and after operation, and the use of continuous irrigation for several days after.

DR. L. P. MCCALLA, Boise: Metastasis to the bones frequently occurs in cancer of prostate, and metastasis of cancer of the thyroid to the prostate is not uncommon. In regard to method of operating, each operator develops a technic of his own which for him is best. For five years I have used continuous irrigation with excellent results except in one case.

DR. H. GOODFRIEND, Albion: On the pathologic examination of several hundred cases of diseased prostate, about 2 per cent. of the specimens in one series were found to be malignant, while in a second series from another operator about 6 per cent. were malignant.

DR. G. WHITESIDE, Portland: I am familiar with the figures just given and the claims made by certain operators, but I think that 10 per cent. is nearer the right figure of percentage for malignant cases.

Tubal Pregnancy

DR. J. A. PETTIT, Portland, read this paper.

DISCUSSION

DR. W. T. DRYSDALE: Is it advisable to postpone operation until after recovery from shock? In my opinion there is a considerable percentage of patients who do not die from the initial hemorrhage and shock, and most of them have a better chance for ultimate recovery if we wait until after recovery from shock before operating.

DR. L. P. MCCALLA, Boise: It is important to diagnose these cases early and to be prepared for the impending trouble. Most of these patients give a history of former pelvic inflammation and irregularity of menstruation, usually being from 2 to 10 days over-time rather than under-time. If gestation is located near the uterus we can usually find decidual membrane if the microscope is used. The pain is different in character from any the patient has before experienced. The best time to operate depends on the case, but not all patients should be operated on without preparation or recovery from shock. When it is possible to do so, these patients should be referred to an experienced surgeon. It is unusual for them to die if not operated on during profound prostration of shock. The points of especial assistance in making an early diagnosis are: (1) a history of past pelvic inflammation; (2) irregular menstruation, usually going overtime; (3) difference in type of pain, and (4) mucous type of discharge, often containing decidual cells.

DR. G. WHITESIDE, Portland: It is very interesting to me, as a genito-urinary specialist, to learn that human spermatozoa might remain active in the tube for as long as 3 weeks, and that the bat's spermatozoa might remain active for 6 months. It is interesting, also, to think of the possible medicolegal complications that might arise from these facts.

DR. VAN NOTE, Boise: It is usually taught that operation should be done in these cases of extra-uterine pregnancy as early as possible, but we often lose sight of the fact that the shock stops the hemorrhage. However, the hemorrhage is apt to recur on revival of the patient, and beginning of the recurrence would appear to be the ideal time for operation.

DR. G. H. COULTHARD, Idaho Falls: All these patients should be operated on as soon and as quickly as possible, clamps being used if necessary, and left on until it is safe to remove them.

DR. L. P. MCCALLA, Boise: I do not wish to be misunderstood as to my position in the matter of time to operate. A reason for postponing operation is the frequent unpreparedness in these cases, with lack of proper hospital facilities and skill in operating. Personally, I operate in all cases, but I probably have better advantages than the physician who sees his case in the country. It is safer to wait for proper preparation than to undertake an operation like this under improper surroundings and without proper preparation.

DR. J. A. PETTIT, Portland: I always operate as soon as a patient can be removed to hospital, as I have found that the operation itself causes no shock. It is the hemorrhage that causes death. Tubes that bleed freely are easy to remove or tie off, as they are not bound down by adhesions, and we must remember too that shock does not always stop the hemorrhage. I know of no way of estimating the percentage of these patients who would recover without operation, and it is also so difficult to diagnose the presence of a decidua vera that it is hard to say what size it might become.

Diagnosis and Treatment of Certain Hip-Joint Diseases

DR. C. F. EIKENBARY, Spokane, read this paper.

DISCUSSION

DR. L. P. MCCALLA, Boise: I am surprised to learn that many of these fractures occurred in younger people, as I have been of the impression that most of them were in old women.

Breaking up the adhesions under anesthesia is of great importance in securing a useful limb I use the *x* ray in these and all other fracture cases as a routine practice

Dr E Van Note I have obtained considerable assistance in determining the amount of tilting of the pelvis by placing a yardstick or rule across the pelvis on the anterior superior spinous processes

Dr W. R Drysdale We frequently are in doubt for some time as to whether or not a fracture is really present, and, in my opinion, such cases should be treated as fractures until we are sure of diagnosis

Dr Eikenbary We should not depend too much on the *x* ray findings as they may lead to error The length of time that hip joint disease should be treated must necessarily differ in different cases, but it should usually cover a period of from 2 to 3 or more years

Hygienic Laboratory for State Board of Health

Dr Ralph Falk, secretary of Idaho State Board of Health read a report on the needs the state had for such a laboratory, and asked the association to endorse the board's petition to the legislature, asking for a sufficient appropriation to equip and maintain such a laboratory

After considerable favorable comment on the advantages to be derived from such a laboratory, the association, on motion of Dr E W Kleinman, endorsed the plan for a state hygienic laboratory and unanimously joined with the State Board of Health in asking the legislature to appropriate sufficient money for its maintenance in an efficient and practical manner

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting held at Fort Wayne, Sept 18 30 1910

(Continued from page 1759)

Rabies—History and Treatment

Drs H S Thurston and H R McKinstry, Indianapolis Rabies was known as far back as the time of Aristotle, and was described by Galen and Celsus In Berlin, rabies was common prior to 1875 Since then a law has been enforced requiring the killing of dogs suspected of rabies, and the muzzling and leading of dogs when in public places There have been no cases of rabies there since 1883 Previous to Pasteur's work treatment was ineffective The method I follow is Pasteur's with the Calmette modification In my opinion the muzzling of all dogs will prevent 90 per cent of human rabies As a result of the Pasteur treatment, in 26 000 patients treated in Paris from 1886 to 1901, less than 1 per cent died from hydrophobia A similar ratio is shown in New York and other places

DISCUSSION

Dr J P Simonds, Indianapolis Rabies or hydrophobia is in many ways one of the most peculiar diseases known It is classed among the infectious diseases but there is probably no other infection in which the incubation period is so variable in which so few persons (probably not more than 10 per cent) inoculated with the virus actually develop the disease, and which is so uniformly fatal when once the symptoms have appeared Of recent work on this perplexing disease, that of Paltauf is the most enlightening He had the rare opportunity to perform autopsies on seven persons who had been bitten by rabid dogs, but died of some other cause. Four of these had not taken Pasteur treatment Although they had shown no symptom of hydrophobia up to the time of their sudden deaths, their brains were proved to contain the rabic virus by the production of the disease in rabbits inoculated with them The other three had taken Pasteur treatment and their brains were not virulent for rabbits Paltauf's conclusions were that in infected persons the virus usually reached the brain and cord only to be destroyed there in nine cases out of ten, by the natural protective mechanism of the body The institution of Pasteur treatment merely rendered this natural defensive mechanism more effective. It is now less than ten years since Negri discovered certain granular 'bodies' in the brain cells of infected animals, and thus made possible a quick and accurate diagnosis of this disease There has been much dispute as to the real nature of these 'Negri bodies" and at least four theories have been advanced to explain them Negri and others believe that they are protozoa, belonging to the microsporidia, and that they are the immediate cause of the disease They base this conclusion on the internal structure and staining properties of the bodies The specificity of these bodies for rabies is now generally accepted Pool collected the statistics from six European laboratories in which the microscopic examination of 550 dogs' brains had been controlled by animal inoculation. In 334, Negri bodies were found, and all the guinea pigs inoculated with these brains developed rabies In the remaining 206 cases, no Negri bodies were found but eleven guinea-pigs injected with these brains developed the disease Hence this general principle has come to be accepted as expressing the truth: The finding of Negri bodies in a brain may be accepted as positive proof that the animal had rabies, but failure to find them does not prove absolutely that the animal was free from the disease During the last 4 years an extensive epidemic of rabies has existed in Indiana At the Indiana State Laboratory during this time the brains of 376 animals have been examined and of these 213 or 56 6 per cent showed positive evidence of rabies This by no means represents the actual number of cases of the disease for many animals known to have been infected die of the disease and their heads are not sent to the laboratory at all Our method of diagnosis is as follows Stained smears from Ammon's horn and the cerebellar cortex are examined for Negri bodies If these are found the case is pronounced positive at once If Negri bodies are not found and the dog has bitten some human being a guinea pig is injected subdurally with an emulsion of the brain It has been only a very rare occurrence that the guinea pig test has proved positive when no Negri bodies were found with the microscope

It is impossible to measure accurately the amount of damage done in this state by rabid animals Our records show that 165 persons have been bitten, but this probably does not represent half the actual number The loss of live stock has been very great A dairyman at Richmond lost fourteen fine milk cows as the result of the ravages of one dog Similar stories of large individual loss have come from other parts of the state Early this year there were indications that the epidemic was abating But since May a large number of cases have developed in territory hitherto free from the disease In the north central part of the state there is a newly infected district, including Howard, Carroll Tippecanoe and Benton counties the chief foci being about Kokomo and Lafayette In the south central portion is another strip of recently infected territory, extending from Wayne county southwest through Fayette, Rush, Shelby and Decatur counties At present the outlook for subsidence of the infection is not very promising

Dr Ellen Knabe Indianapolis Those who have followed the work of the Indiana State Laboratory through the last five years especially since 1906, will know that everything has been tried to eradicate this epidemic of rabies In 1905, especially, the epidemic was widespread Few portions of the state did not suffer damage on account of it

Those who have stood, as I have, at the death bed of a person dying from hydrophobia, will never forget it Usually the greatest trouble is with the people who believe that everyone's dog is liable to harbor the infection except their own. Occasionally a community will pass a muzzling order Muzzling is the only way to stop the spread of this infection; but my experience has been that such laws are very imperfectly enforced, and that enforcement is not persisted in long enough to do any good These sporadic efforts, however, are of no value Any measure to be effective must be state wide There must be no place where the dogs are not muzzled Half our measures are worse than none at all, and only tend to bring into discredit the only method which brings any results if persisted in If we would only muzzle every dog that is worth the cost of a muzzle, and destroy all the rest we could soon get rid of the infection, but at the end of a year or two, were we to relax our vigor the infection would soon be carried all through the state again.

Fracture of the Patella

Dr Paul J Barcus, Crawfordsville Fractures of the patella constitute 1 4 per cent of all fractures, and this bone is refractured more frequently than any other, 88 per cent of these fractures occur in males, most frequently between the ages of 30 and 50 They are caused by direct violence, such as a gunshot wound or a fall or blow on the knee, or by indirect violence—muscular strain The relative frequency of these causes is a matter on which there is the widest difference of opinion The treatment is operative and nonoperative. Non operative treatment is limited to cases in which operative treatment is contra indicated The time of operation is a subject of debate The tendency at present is to wait five or seven days after the injury before operating in order to permit the joint to acquire a certain degree of immunity that follows a hemorrhage into the joint, and to permit swelling and immediate reaction in a measure to subside In an ordinary case if seen early, I can see no good reason for delaying operation beyond a few hours Indeed, delay is an acknowledgment of lack of confidence in our surgical technic and delay protracts convalescence the number of days delayed The institution of passive motion at as early a date as possible, massage and careful use of the knee, are of the greatest importance in the after care

DISCUSSION

Dr H R Allen, Indianapolis In repairing these cases it is important to run the purse string suture close to the patella—to get as close to the bone as possible If this is not done there will be limitation of motion

Silk or linen sutures lubricated with petrolatum should never be used They will not hold Wire should be used My preference is medium soft steel wire polished bright and sterilized The patient should lie flexed at the hips, in order to relax the tension of the extensor muscles I do not use plaster of Paris, I prefer wire splints, because they are easily removed to permit inspection In order to avoid adhesion begin passive motion at the end of the first week Begin flexion later on Be sure by the time the fibroid structure is established that motion has been established, at the best you can do, not all of your cases will come out perfect

(To be continued)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixtieth Annual Meeting, held at Pittsburg, Oct 3 6, 1910

(Concluded from page 1758)

Oration on Surgery Surgery, Past, Present and Future

Dr John B Deaver, Philadelphia If we pause at any moment to assess the present or gaze into the future, our safest guide is a knowledge of the past Every race in every age has flattered itself that it was the true age of progress and believed that the like could never be seen again The surest antidote to such complacency is to realize how often this has proved false in the past The surgery of the past was notable chiefly for the establishment of a few underlying principles on which all our modern practice is based For centuries men were content to have pus and even praised it if it were of that consistency and character which was thought proper. Then, as now, the object of the surgeon was to get his patient well, and he gave less thought to originating epoch making innovations applicable to all surgery than to the individual problem presented by his patient It was accordingly only after ages of groping among details that principles began to emerge. The period did not lack for men of boldness and ingenuity, but they suffered from a lack of these underlying essentials of successful surgery.

The present era of surgery dates from the discovery of anesthesia by Morton and the practical recognition by Lister of Pasteur's discoveries. The surgery of the present is remarkable for the elaboration of method and technic and the rise of surgical pathology With the introduction of new methods surgery found its main field in the body cavities, regions previously secure from entrance Also operations for cancer and on the vascular system have been vastly improved Abdominal surgery has been opened up as a new field The surgery of the pylorus and the pancreas is being rapidly developed Dyspepsia has been found to rest usually on an organic basis The surgery of the pelvic organs and the genito urinary tract has reached a plane of efficiency where it waits on improvement in diagnosis and early reference of patients The surgery of the head has advanced *pari passu*, it responds to the same principle as in surgery elsewhere The surgery of the thoracic cavity has lagged behind on account of the difficulties of practical application of surgical principles This problem belongs to the future The treatment of infections will be greatly aided in the future by serums and vaccination As yet, the early application of the aseptic scalpel reigns supreme in the cure of tumors benign and malignant Every tumor especially of the breast, uterus or stomach, should be considered malignant until proved benign

Pathology and Treatment of Acute Bone and Joint Infections

Dr J B Murphy, Chicago. Ankylosis of joints occurs only where the bony surfaces come into contact Therefore, in acute joint affections to prevent ankylosis extension should be put on Tension must be relieved, not by incision, as that leads to obliteration of the cavity, but by aspiration Following aspiration there is injected into the joint a 2 per cent dilution of liquor formaldehydi in glycerin In acute osteomyelitis in order to prevent destruction of the bone, it is essential to relieve pressure at once This the physician can do with a knife and an ordinary gimlet In case the bone is destroyed it can be restored by transplanting

Acute Dilatation of the Stomach: Report of a Remarkable Case

Dr. E Laplace Philadelphia Acute dilatation of the stomach is very fatal 63 5 per cent of individuals so affected dying It is not so rare as the literature leads us to believe This is shown by the rapid increase in the number of cases reported since the subject has become better known The stomach tube is the immediate remedy When, however, the condition is more accentuated, a large gastro enterostomy should be performed to drain the stomach effectually and permanently The rarity of this condition should be no excuse for our overlooking its possible existence in a given case, for an early diagnosis, followed by washing out the stomach might prevent a condition which otherwise would prove fatal in a few hours

Chronic Gastroduodenal Dilatation

Dr G P Muller, Philadelphia The etiology of postoperative dilatation of the stomach is still obscure, dilatation of the stomach being considered by some as primary and by others as secondary to compression or kinking of the duodenum The chronic type has been reported in only a few instances, but may have a similar etiology

Discussion on Dilatation of the Stomach

Dr John H Musser, Philadelphia The only case of dilatation of the stomach I have seen was one that appeared to be due to defective innervation I have been on the lookout for gastroduodenal dilatation, but I must confess that I cannot during life make the diagnosis of the condition

Diffuse and General Peritonitis

Dr John J Buchanan, Pittsburg The best treatment of peritonitis is its prevention The bulk of cases are usually the result of perforative appendicitis and can be prevented by removal of the appendix within a few hours or a day of access of the first pains Purgation is the most deadly medication that can be employed in acute appendicitis or diffuse peritonitis Immediate operation, or at least during the first twenty-four hours, dry mopping and closure of abdomen without drainage can be relied on to effect a cure in almost every case of free, diffuse or spreading peritonitis from perforative appendicitis. Treatment by irrigation is disseminative of septic products and should not be employed. Even the earliest operations cannot yet be relied on to check the spread of peritonitis from perforated gastric ulcer, and in these cases the delay of a few hours may mean death for the patient.

Dr. J. B. Murphy, Chicago: I have had sixty-four consecutive cases of perforative peritonitis with sixty-two recoveries. This does not include the appendiceal abscesses or appendicitis cases with large quantities of pus that did not communicate directly from the alimentary tract into the free peritoneal cavity. I feel that we as a profession must come up to the standard that all cases of appendiceal peritonitis with the exception of 1 per cent. of primary perforations are avoidable. The diagnosis can and should be made before the perforation.

Diagnosis of Duodenal Ulcer; Indications for Operative Intervention

Dr. J. H. Gibbon, Philadelphia: The pain of duodenal ulcer comes on in from two to four hours after ingestion of food and is apt to keep up until the next meal is taken. The pain is a steady ache and may be referred to the back or right mammary region, and is accompanied by a sense of fulness in the upper abdomen. The pain is also relieved somewhat by eructations of gas, vomiting, lavage and alkalies. The pain will last from a few days to a few weeks with an interval of comfort. Blood in the vomitus or stools is a late symptom and diagnosis should be made before this occurs. Gastric analysis is of very little value. Every patient with chronic duodenal ulcer should be subjected to surgical treatment. In early cases a cure may be obtained by medical treatment. No operation should be done on the gastro-intestinal tract for ulcer unless ulcer can be plainly demonstrated.

The Indications and Technic of Partial Gastrectomy

Dr. C. H. Frazier, Philadelphia: The resort to gastrojejunostomy in all cases is undesirable. This operation is suitable for ulcers of the pylorus when causing obstructive symptoms. Prepyloric ulcer and saddle-back ulcer not causing obstruction should be removed by resecting the pyloric portion of the stomach. Ulcers far distant from the pylorus, as in the fundus, should be removed by partial excision. In the development of the radical operation for carcinoma of the pyloric portion of the stomach, too little attention is paid to the topographic anatomy of the lymph nodes. Operation to be radical should include removal of the six primary lymph chains, namely, the suprapyloric, inferior coronary, right paracardial, gastro-epiploic, subpyloric or retropyloric and the suprapancreatic. The retropyloric ulcers are the most frequently overlooked and the suprapancreatic are the most difficult to remove.

Delayed vs. Immediate Operation for Extrauterine Pregnancy

Dr. C. A. Stillwagen, Pittsburg: Hemorrhage and shock in terminated ectopic pregnancy are rarely severe enough to cause death. In cases in which hemorrhage is severe and persistent, death not infrequently results before operative treatment can be instituted. Patients who survive the initial hemorrhage, but are profoundly shocked and anemic, can be more safely treated by delaying operation until the condition improves, than by immediate laparotomy. Operation should be performed as soon as possible after termination of ectopic pregnancy, provided it can be done with safety to the patient. In selecting the time, every surgeon will, of course, use his own judgment, but he must show a low mortality in order to justify any given plan of procedure.

Surgery as a Prophylactic Measure Against Intestinal Complications in Typhoid

Dr. L. J. Hammond, Philadelphia: When, during the course of typhoid, there is reasonable certainty of the existence of bands or adhesions especially affecting the functions of the intestinal tract at any of its flexures and sufficient to produce severe abdominal symptoms, exploratory laparotomy should be done with a view to removal of mechanical barriers to intestinal activity which favor ulcerative processes going to perforation.

DISCUSSION

Dr. G. L. Hays, Pittsburg: In my experience in about fifty cases of operation for complications of typhoid none have shown any preperforative signs. While it is possible, I doubt if these signs are very frequent. Of course, if we can prevent this condition by any kind of operation, I think it would be a very good thing to do, but I do not believe that we will ever be able to perform an operation which will completely eradicate these conditions.

Relative Value of the Various Methods for the Determination of Kidney Sufficiency

Dr. B. A. Thomas, Philadelphia: The most accurate and dependable test for determination of renal function is that by quantitative metabolic study, but such study is usually impossible. Any test dependent on synchronous catheterization of the two ureters has a limited field of application. The cystoscope, together with one of the anilin dye tests, notably indigo carmin, affords the most practicable means of kidney diagnosis.

Results of Gall-Stones

Dr. J. A. McGlinn, Philadelphia: In eight out of eleven cases of cancer of the bile ducts stones were present. In a series of autopsy records of gall-stone cases various related lesions were noted. While it cannot be said that all these lesions were due to gall-stones, many undoubtedly were. These lesions can be prevented only by early operation in gall-stone cases.

The Pelvic Fascia and the Operation for Cystocele

Dr. R. E. Brenneman, Pittsburg: The bladder and anterior vaginal wall are attached to the white line which gives rise to the levator ani, and by cutting these attachments, a cystocele is produced by downward pressure. These protrusions of the anterior vaginal wall, either lateral, bilateral, complete or partial, must be considered true hernias and are produced by a variety of causes. These are repaired by restoring the normal anatomy so far as possible. This is best done by the method of White of Savannah, which I have used in several cases with success.

Cecostomy vs. Appendicostomy for Colonic Irrigation

Dr. W. M. Beach, Pittsburg: The comparative safety of cecostomy is apparent. Cecostomy or appendicostomy should always be considered as an adjuvant to medical measures to be invoked in order to treat local conditions locally. It should be considered a legitimate treatment of toxemias of intestinal origin, amebic dysentery, obstinate colitis and constipation, tuberculosis and syphilis, and it is believed to be justified as an adjuvant to medical measures in anemia, intussusception and typhoid. It is of value in acute septic peritonitis, in order that ice may be applied both internally and externally.

Oration on Obstetrics: A Plea for the More Intelligent Care of the Pregnant and Lying-in Woman

Dr. H. F. Tomb, Johnstown: Let us endeavor to have every one of these patients under the guidance of a physician from the very beginning of pregnancy. Let us make an effort to obtain better nursing and by procuring the better care and nursing get rid of the midwife and her class. Let us give to our labor cases more time and care, both during labor and the puerperium, and never discharge a patient of this kind until we have made a thorough examination.

SYMPOSIUM ON GONORRHEA

Prophylaxis of Gonorrhea

Dr. M. F. Bates, U. S. N.: In the Navy general preventive measures, such as mental and physical exercises and diversions and instruction by lectures and leaflets, have been employed to the fullest extent. Prophylactic treatment after exposure has been used in the last few years with excellent results. If administered within eight hours of exposure protection is almost certain, but even after forty eight hours it is sometimes of value

Abortive Treatment of Gonorrhea

Dr Macy Brooks, Philadelphia Gonorrhea cured within two or three weeks is to be considered aborted Abortive treatment is seldom effective later than when the discharge is just becoming mucopurulent, and there is at most a slight burning on urination Injections too strong or too frequent are harmful A daily injection by the surgeon is sufficient Should abortive treatment fail, treatment can be continued as in the usual case

Treatment of Acute Gonorrhea

Dr W F Donaldson, Pittsburg When acute gonorrhea is recognized and treated more as a pathologic condition and less as a social disease, it will take its place among curable diseases and not rank among the leading disseminators of death and destruction If it be true that acute gonorrhea is curable, it is time that we cease to be alarmists and rather educate the public that the unfortunate individual with acute gonorrhea may with early intelligent and diligent treatment be cured I would urge physicians to deal with patients infected with acute gonorrhea in such a sympathetic and dignified manner that in the course of time all such sufferers will early seek medical advice and follow it until a cure has been effected

Diagnosis and Treatment of Chronic Gonorrhea

Dr T L Disque, Pittsburg For the diagnosis of chronic urethritis it is necessary to determine the character of the discharge, make a microscopic examination of the discharge, investigate the urine and make a careful local examination of the urethra itself In the treatment disinfection by lavage with potassium permanganate is carried out until the discharge is stopped, this procedure is then followed by instillations of silver nitrate If there is infiltration of the submucosa, dilatation and massage must be practiced Of internal remedies the balsams and disinfectants are of value when the urine is turbid and the diluents when there is concentration and acidity

Discussion on Gonorrhea

Dr H M Christian, Philadelphia In the early stages of gonorrhea in local treatment, I believe that there is nothing better than the use of permanganate of potassium, though I do not believe that it will ever cure a case of gonorrhea To cure a case of gonorrhea something is required that acts on the mucous membrane of the urethra like an astringent I agree with what Dr Brooks said of the abortive treatment I feel that all chronic gonorrhea is found in the prostate I am coming to leave the anterior urethra almost out of the question unless there is present in the anterior urethra a stricture or some other involvement, but I believe that in 75 or 80 per cent of chronic urethral discharge there is prostatic involvement

Dr S W Moorhead, Philadelphia I have reluctantly come to the conclusion that the microscopic examination is in itself insufficient to demonstrate whether or not gonococci are present in a discharge and that recourse should be had to cultures This necessitates a large amount of laboratory work and equipment, but it is a work which ought to be done and which I believe will have to be done in very many cases

Dr W C Bryant, Pittsburg I think we make the mistake sometimes of being over zealous in treatment There is no doubt that acute inflammation is a beneficent process and while it may not last very long there is a time in treating some cases of gonorrhea at least, when the urethra is better left alone Permanganate of potassium should never be in stronger solution than 1/5 000

Dr T L Disque, Pittsburg What Dr Christian has said in regard to the rôle of the prostate is well taken While the prostate is a marked feature in the prolongation of chronic urethritis and probably the greatest hiding place of the gonococcus, it is not the only one and we should not neglect other portions of the urethra or the genital tract.

Clinical Results Following the Use of Vaccines and Serums in Treatment of Gonorrhea and its Complications

Dr W H MacKinney, Philadelphia The bacterial vaccines have not demonstrated their value in the treatment of acute or chronic gonorrhea or its acute complications In metastatic infections, chiefly arthritis, they have given good results in a few cases but the results cannot be compared to those obtained from the serum In the treatment of metastatic gonorrhea both the serum and the vaccine are of considerable value though they are not specifics

The Question of Marriage Following Gonorrhea

Dr George A Holliday, Pittsburg Gonorrhea is the married woman's most common disease The double standard of morality must be frowned on The girls should be taught that venereal infection will ruin her health and, therefore, that she must demand a clean bill of health from her prospective husband Most of the sterility in women is due to gonorrhea and 50 per cent of infected women are sterile Men should be instructed in prophylaxis Physicians are responsible for a large percentage of innocently infected wives because they do not thoroughly treat gonorrhea and its complications in the male

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Boston Medical and Surgical Journal

November 3

1 Etiology of Cholecystic Gall Stones W I Clark, Worcester Mass
2 A Fallacy in Psychotherapy J E Donley, Providence R I
3 Spontaneous Dislocation of the Hip Joint Following Acute Infectious Diseases C G Cumston Boston
4 *Technic of Arthrotomy C F Painter and A P Cornwall, Boston
5 Stomach Diseases from a Medical Standpoint G A McEvoy, Boston

4 **Technic of Arthrotomy**—Among the series of thirty excisions reported by Painter and Cornwall were one case of chondroma, three of infantile paralysis and two of infectious arthritis, one of these was a polyarthritis There was one death attributable directly to the operation, that being in the case of infectious polyarthritis There were three infected joints, but no serious consequences resulted Convalescence was not even retarded by it in any case There was one other case in which there was a stitch abscess Twenty four of the excisions were for tuberculosis Two of these patients died some months after the operation, one from miliary tuberculosis and one from phthisis One patient had a partial excision, one femoral and the corresponding tibial condyle, she secured a good degree of motion in the joint and after having an osteotomy to correct her knock knee she had a very serviceable articulation Two patients already referred to had secondary excisions Only one was lost sight of before union was complete Only one did not have satisfactory position In three only of these cases were metal sutures used, in two of these they were removed, and in one there was slight necrosis about the stitch One patient still has the wire in place

A small series of erasions follow Most of these were performed for tuberculous disease The technic of getting at the interior of the joint is not in any way dissimilar from the technic used in the excision operation The operation is not, in the author's opinion to be compared in its beneficial effects with the operation of excision Whether it be accomplished by sawing through the patella and flexing the knee, or by dividing the patellar tendon and reflecting back the patella thus exposing the quadriceps pouch, the convalescence is protracted to such an extent by the union of the bone or the tendon (whichever method is employed) that there is very little likelihood of obtaining enough motion to justify the operation in such an articulation as the knee In other joints it might be used in selected cases, but seldom in the knee The difficulty is not in securing a pathologic cure, but in procuring enough function to justify the operation. One of the things that has been brought out from a study of these cases and the excisions is that tuberculosis in the knee, at any rate, starts very much more frequently than has generally been supposed from the synovial membrane, and is likely to invade the cartilage and bones if a tuberculous synovial pannus be allowed to lie too long in contact with such structures. In certain selected cases erasion and the procurement of a pathologic cure, even though very little motion should be secured, the patient might be subjected later to an arthroplasty to secure motion. Several of these patients have had 20 degrees of motion for a year or so after the operation, but have gradually lost it and have been a great deal better off when ankylosis had taken place.

Medical Record, New York

November 5

6 The Ehrlich-Hata "606." J. B. Stein, New York.
7 Custodianship of the Watch and Bible of Dr. Benjamin Rush. R. Abbe, New York.
8 Complete Subparietal Rupture of the Kidney. H. G. Bugbee, New York.
9 Nonenity of Acute Dilatation of the Stomach. G. E. Barnes, Herkimer, N. Y.
10 Tetanus Following Vaccination. C. D. Scott, St. Louis.
11 Asthma and the Lung Reflexes of Abrams. A. Abrams, San Francisco.

New York Medical Journal

November 5

12 Use of the Ehrlich-Hata "606" in Syphilis. J. A. Fordyce, New York.
13 Vital Statistics in the Promotion of Public Health. W. H. Guilfoy, New York.
14 Tuberculosis of Bones and Joints. E. M. Brown, Chicago.
15 Diagnosis and Treatment of Tuberculous Joints. P. P. Swett, Hartford, Conn.
16 Rational Basis for the Treatment of Narcotic Drug Addiction. G. E. Pettey, Memphis, Tenn.
17 The Kind of Inebriate Who Needs State Care and the Kind Who Needs the Private Sanatorium. C. C. Wholey, Pittsburg, Pa.
18 Tissue Cell Evolution. I. L. Nascher, New York.
19 Modern Neurology of Spiritualism and Possession. T. A. Williams, Washington, D. C.
20 A Blood-Pressure Record. A. K. Sallom, Philadelphia.
21 Cerebrospinal Fluid in Acute Anterior Poliomyelitis. W. H. Hough and G. R. Lafora, Washington, D. C.

Lancet-Clinic, Cincinnati

November 5

22 Conclusive Researches in Medicine as Seen Through the Eyes of a General Practitioner. A. A. Arthur, Marshfield, Mass.
23 What Should the Public Do With and For the Tuberculous? C. A. Hough, Lebanon, Ohio.
24 Symptoms of Exophthalmic Goiter. H. L. Woodward, Cincinnati.
25 Surgical Treatment of Exophthalmic Goiter. W. D. Haines, Cincinnati.
26 Ocular Symptoms of Exophthalmic Goiter. V. Ray, Cincinnati.

Cleveland Medical Journal

October

27 Senescence and Natural Death. W. T. Howard, Cleveland.
28 *Sacro-Iliac Strains. G. N. Morrill, Cleveland.
29 Surgical Aspect of Tuberculous Cervical Lymph Nodes in Children. A. F. House, Cleveland.
30 Chronic Lead Poisoning as a Diagnostic Factor in Appendicitis. I. I. Yoder, Cleveland.
31 Exophoria, with Reference to Its Causes, Reflex Disturbances and Treatment. E. Lauder, Cleveland.
32 Pasteur Contribution to Preventive Medicine and Bacterial Invasion. R. J. Cary, Cleveland.
33 Pellagra. C. A. King, Newark, Ohio.
34 Parasitology and Pathogenesis of Syphilis. O. T. Schultz, Cleveland.

28. **Sacro-Iliac Strains.**—In a greater number of the acute strains of the sacro-iliac joints, Morrill found that only one side is affected, and that by pressure one can generally tell which it is. The motions of the body are more or less guarded, depending on the severity of the case, especially those motions that bring any strain on the injured joint. Thus, in forward bending, the patient will lean slightly toward the opposite side, thus removing any strain from the injured side, and lateral bending is also restricted in the lower portion of the spine in leaning toward the well side, while toward the injured side it is included in the general curve. This is caused by the spasm of the erector spinæ muscles on the affected side. In backward bending the entire trunk is often held rigid, and it may be impossible for the patient to regain an upright position. Often in severe cases the greater part of the body weight is thrown on the sound side and one may find a marked curve in the lower spine, with perhaps a compensatory one higher up, caused by the tilting of the pelvis laterally to relieve the injured joint. In these cases the hip on the affected side is the more prominent, and the leg seems longer, the patient standing with the knee bent. With the normal individual it is possible, with the patient either seated or lying down with the knee extended, to raise the leg to a right angle; but in sacro-iliac injuries this motion is limited on the affected side. The most common causes for acute strains are said to be in rising suddenly from a stooping position while lifting a heavy object, or in suddenly putting the entire weight on one leg before the muscles holding the sacro-iliac joints have had time to contract; as in stepping into a hole or slipping when lifting anything. In these cases there may be a partial dislocation, which may or may not reduce itself. With the female this is much more apt to occur during the menstrual period, as at these times the sacro-iliac joints naturally loosen. These joints account for the sciatica that is so often noticed in pregnant women, and a great improvement usually follows the application of a properly fitting apparatus which holds the joints together and yet does not press on the abdominal wall. Most chronic cases are due to unreduced dislocations or to a bad poise of the body either natural to the individual or assumed; good examples of the latter are found in severe cases of painful flatfoot. In the acute cases an adhesive plaster strapping is applied to the back, to hold the joints together until a properly fitting belt can be made. This is done to rest the muscles and to aid them in regaining their normal strength. Later, certain exercises are necessary. If in the severe cases the treatment does not relieve the patient, the joint should be carefully manipulated; this usually requires ether, as nitrous oxid does not entirely relax the muscles. A plaster jacket is then put on, great care being taken to obtain the normal lordosis and to fit the jacket sufficiently to the pelvis so that the joint will not slip out. Sometimes nothing is accomplished at the first manipulation except the stretching of the adhesions. Often it will be found necessary to apply a light spring back brace, after the plaster jacket is removed, to assure oneself that the trouble will not return again from bad posture, and also to retain the normal lordosis until the patient learns to stand properly. There is one important thing that Morrill calls attention to, namely, that ordinarily when a patient is placed on an operating table under an anesthetic no provision is made to maintain the normal curves of the spine. When the muscles are relaxed these curves are lost, and with the legs extended or perhaps tied down, the psoas and iliacus must stretch. Now, if a small pillow is placed under the lumbar spine and a larger one beneath the knees this cannot happen. The surgeon has this advantage: if this is followed out, the abdominal muscles are lax and therefore can be retracted more easily and the pelvic organs are more nearly in their normal positions. The pelvis is, of course, slightly deeper, but the patient will not have the troublesome backache with perhaps sciatica, that so often causes suffering after an operation.

Journal of the Indiana State Medical Association, Fort Wayne

October 15

35 Advancing Standards in Medical Practice. T. C. Kennedy, Indianapolis.
36 Carcinoma of the Frontal Sinus. G. W. Spohn, Elkhart.
37 The Man at Your Elbow. H. Miller, Marion.
38 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.
39 The Nature of Insanity. G. Rowland, Corington.
40 Mental Defects of Children, and Their Prevention. P. Woolery, Heltonville.
41 The Secretary of the County Medical Society. C. N. Howard, Warsaw.

Bulletin of the Manila Medical Society

September

42 *Multiple Neuritis of Fowls Due to Inanition. E. D. Kilbourne, U. S. Army.
43 *Tuberculosis of Infants and Children in the Philippines. A. G. Sison, Manila.
44 Etiology of Beriberi in Nursing Infants. M. S. Guerrero, Manila.
45 Umbilical Tetanus. L. Shapiro, Manila.
46 Prevalence of Respiratory Affections Among Filipino Children. R. Parish, Manila.

42. **Multiple Neuritis of Fowls.**—In one of Kilbourne's experiments a fowl, fed on a reduced amount of neuritis-preventing, undermilled rice, died with signs and symptoms of neuritis, and microscopic examination showed degeneration of its nerves. From the signs and symptoms exhibited, Kilbourne believes that another fowl, as a result of starvation for twenty-three days, developed multiple neuritis. This fowl was chloroformed and its nerves examined after standing in osmic acid and teasing in glycerin. Degeneration was found. Spasticity, Kilbourne says, is a late development of neuritis in fowls. He is now conducting further experiments with a larger series of birds.

43. **Tuberculosis of Infants and Children.**—According to statistics taken from the last annual report of the Bureau of Health of the Philippine Islands, the total mortality of infants, from birth to 1 year old, in Manila, caused by miscellaneous diseases was 4,090. Thirty-nine of these died of tuberculosis, distributed as follows: seventeen died of pulmonary tuberculosis; three of tuberculous peritonitis and nineteen of tuberculous meningitis. Of the 4,090, 764 died of infantile beriberi, and 199 of gastro-intestinal diseases. The total mortality of children from 1 year to 5 years old for the same fiscal year of 1910, is 1,194. Of this number, 114 died of tuberculosis in its different manifestations, and 157 of gastro-intestinal diseases. From the above figures Sison obtains the following percentage of mortality: Death from tuberculosis in infants 0 days to 1 year old is 0.95 per cent.; and for children of 1 year to 5 years old is 9.50 per cent.; in other words, the mortality from tuberculosis in children is ten times greater than it is in infants. He says that the incidence of tuberculosis in children cannot be estimated properly from the aforesaid figures, because they represent only those who died directly from the disease, and do not include those tuberculous infants who died from some intercurrent illness. The most important factors responsible for such widespread tuberculosis in children are, in Sison's opinion: 1. Relatively, there are more persons in this country affected with tuberculosis than anywhere else, as is shown by the statistics taken in the dispensary of the Philippine Medical School. Over one-third of the patients who apply for treatment in this dispensary are suffering from tuberculosis. This wide distribution of the disease is of itself an important factor in increasing the liability of our infants and children to acquire the infection. 2. The *modus vivendi* of the lower class is exceedingly favorable to the spread of the infection. 3. The general frequency of congenital debility in children born from tuberculous parents, and the well-known inherited predisposition to tuberculosis transmitted from the parents to their offspring, are factors that answer for the ease with which the disease is propagated to infants and children. 4. Many debilitating diseases such as gastritis, gastro-enteritis, ileocolitis, produced either by errors in diet or by infections, specially common here, undermine the vital resistance of infants and children previously healthy and naturally strong, and make their organism a well-fertilized soil to receive the germ of the disease. 5. The careless and obnoxious habit of many, but particularly of the ignorant class, of spitting anywhere in the house is another source of many of the infections in children.

Ophthalmic Record, Chicago

October

47 Etiology, Prevention, Treatment and Cure of Trachoma. F. B. Eaton, Portland, Ore.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

October

48 Colica Mucosa and Its Treatment. J. A. Storck, New Orleans.
49 Points in Bacterial Therapy. F. E. Stewart, Germantown, Pa.
50 Immediate and After Management of the Puerperal Woman. J. Shoup, Washington, D. C.

Journal Experimental Medicine, Lancaster, Pa.

November

51 *Compensatory Hyperplasia of the Intima. O. Klotz, Pittsburg, Pa.
52 *The Noguchi Modification of the Wassermann Complement Fixation Test in Diagnosis of Syphilis in the Military Service. C. F. Craig, U. S. Army.
53 *Distribution of Fat in the Liver. J. McCrae and O. Klotz, Montreal.
54 Action of Salts on the Catalase of the Blood in Rabbits. M. C. Winternitz and W. B. Rogers, Baltimore.

51. **Compensatory Hyperplasia of the Intima.**—Klotz conducted an elaborate series of experiments for the purpose of determining the exact nature of compensatory hypertrophy of the intima. He agrees with Jores and others that not one but many factors may be at work leading to intimal hyperplasia. Among these factors are mentioned infection, bacterial toxins, organic poisons, inflammation and increased arterial tension. The theory of Thoma that the connective tissue developed in the intima is compensatory, Klotz does not sustain. From the evidence which he has at hand, he says that it is not possible to state that the proliferative changes in the intima are uniformly secondary to the weakening of the media. Common influences may act simultaneously on the media and the intima. Progressive medial degeneration of the peripheral arteries (Moenckeberg's sclerosis) he regards as the result of muscle fatigue coupled with nutritional disturbance.

52. **Diagnosis of Syphilis in the Military Service.**—In the majority of cases examined by Craig in the laboratory of the office of the Surgeon-General, the result of the Wassermann test was simply confirmatory of the clinical findings. There were, however, numerous suspicious cases, or cases in which symptoms were present and the patient denied a specific history, in which the test was of the greatest value, and it is in such instances, perhaps, that it may be regarded as "the court of last resort" in arriving at a conclusion regarding the nature of the condition present. Certainly if there is any value in experience and statistics, we are justified in regarding this test as the most valuable means we possess of diagnosing lues, and our experience with the Noguchi modification of the test has justified all that has been claimed for that method. Craig believes that his results have proved that by the use of the complement-fixation test in the military service it is possible to prevent the enlistment of men suffering from latent lues who would otherwise be enlisted; to control specific treatment by using it as index of the efficiency of such treatment; to clear up the diagnosis of obscure or suspicious cases; and to enable the surgeon to avoid mistakes in discharges for disability in cases suspected of this disease. Owing to the facilities with which clinical observations can be made in armies, and the control that is possible of tested individuals, Craig hopes that the Noguchi modification of the complement-fixation test will be more widely used than it has been in the military services, for which he believes it is especially adapted. So far as Craig is aware, the Medical Department of the United States Army is the first to adopt this test as a routine diagnostic procedure and to apply it in the case of applicants for enlistment.

53. **Distribution of Fat in the Liver.**—The authors have endeavored in the work on which this paper is based to obtain some information relative to the fat which appears in the liver at death, as well as its nature and distribution. Fat which can be stained and recognized as such appears in a large percentage of all cases, irrespective of age; in the 100 cases comprised in this series, ninety-eight showed a recognizable amount of it; of twenty successive cases taken from the autopsy series, all showed it. In 100 cases, fourteen times fat was present in extreme amount, a condition certainly pathologic, for in thirteen of these when mention was made of the point, the macroscopic appearance was abnormal; thirty-two times it was considerable in quantity, which condition is probably pathologic, for it is attended by an undue friability of the organ; often, too, the lobules are much less distinct than in the normal liver. In fifty-two cases the fat was slight in amount, and twice it could not be demonstrated. These fifty-four cases are open to the interpretation that the fat is merely the expression of low vitality of the cell which is in some way prevented from carrying out completely its metabolism. The authors distinguish four types of fatty deposits in the lobules of the liver: (1) fat deposits in which globules alone are present in the lobules; (2) fat deposits in which granules alone are present; (3) fat deposits in which granules and

globules are found in the same lobule; (4) fat deposits in which globules and granules are found in the same cell. They suppose that granules indicate the (protoplasmic) change commonly spoken of as fatty degeneration, and that globules of small size are excess of fat, stored up by reason of some pathologic change which may be merely temporary. Fat is oftenest central, least often in the mid-zone. A heavy deposit of fat is compatible with a competent liver. Intense fattiness, generally globular, occurs with intoxications of bacterial and chemical nature, as well as in cases in which a complex toxin is manufactured by the body cells. Granular fat occurs oftener than globular: it affects most often the central zone; globular affects most often the peripheral. "Accidental" masses of globular fat are found at times, and appear to follow no rule of position: these are comparable to lipomata, which are evidently the result of a pathologic process. The authors found no deposit of fat characteristic of uremia. The authors know of no analysis of the liver fats in the granular and globular states, respectively: it seems to have been taken for granted that the deposits were one and the same.

Mississippi Medical Monthly, Vicksburg

November

55 Etiology and Early Diagnosis of Syphilis. J. M. Acker, Aberdeen
56 The County Society W. Locke, Carriere
57 Gonorrhea in the Male T G. Hughes, Clarksdale.
58 Ergot F E Lee, Aberdeen.

Journal of the Tennessee State Medical Association, Nashville

October

59 *Diagnosis of Retroperitoneal Enlargements W H. Allport, Chicago
60 Home Treatment of Tuberculosis. D L Wilder, Knoxville
61 *The Nervous Unfit. S S. Crockett, Nashville.

59. This article appeared in The Journal, June 18, 1810.

61. Abstracted in The Journal, May 7, 1910, p. 1572.

Military Surgeon, Washington, D. C.

November

62 Medical Notes from the Recent Nicaraguan Campaign. W S Pugh, Jr, and D G Sutton, U. S. Navy
63 Prevention of Disease in the Army F Smith.
64 Experience of the German Army with Defectives and the Simple Minded R L Richards, U S Army.
65 Suggested Reorganization of the United States Naval Medical and Hospital Corps R R. Richardson, U S Navy.
66 Report of the Board for the Study of Tropical Diseases in the Philippine Islands W. P Chamberlain, H D. Bloombergh and E D Kilbourne, U. S Army
67 Hospitals in the Field J J Boaz, Medical Corps, *Indiana*
68 A Portable Mosquito-Proof Room E B Vedder, U. S Army
69 Modified Caldwell Kitchen Incinerator for Field Use R. U Patterson, U S Army
70 *Abdominal Diphtheria F. Schmitter, U S Army

70. **Abdominal Diphtheria.**—The patient entered the hospital complaining of abdominal pain. When seen, he was vomiting bile-stained fluid. Examination showed both recti muscles rigid and contracting spasmodically and equally on both sides There was tenderness all over the abdomen, but slightly more localized in the epigastrium. The source of the trouble could not be localized in any definite organ. Temperature and pulse were normal, yet the patient was very much prostrated. Leukocytes numbered 14,000. The second day the temperature and pulse were slightly elevated. Prostration and biliary vomiting continued. Pain became slightly more localized in the epigastrium. A suspicion of diphtheria was aroused by the low fever and prostration resembling that of several other diphtheria patients in the hospital at the same time. Patient's throat examination was negative clinically, but Schmitter had found diphtheria organisms in the throats of several persons of normal appearance. Hence cultures were made from the throat of this man. On the third day, a twelve-hour culture showed abundant diphtheria organisms Bowels, which were very constipated, were moved with calomel and enema. The movements had the foul odor characteristic of diphtheria. Antitoxin was prescribed, 4,000 units every six hours On the fourth day the patient was improved; mind was clearer, and he had less pain. There was also decreased rigidity of the recti. By the eleventh day all symptoms had gone. Culture from throat still showed diphtheria organisms.

St. Paul Medical Journal

November

71 Cosmetic Surgery of the Nose. H A Beaudoux, St Paul.
72 Examination of the Surgical Kidney. W. F. Braasch, Rochester, Minn
73 Necessity of Institutional Care for the Tuberculous. E L. Touhy, Duluth.

Laryngoscope, St. Louis

October

74 *Inflammation of the Sinus Maxillaris with Special Reference to Empyema: The Surgical Pathology, Diagnosis and Treatment J. P. Tunis, Philadelphia
75 *Primary Intralaryngeal Actinomycosis. H. Arrowsmith, Brooklyn, N Y.
76 Hemilaryngectomy for Epithelioma. T. P. Berens
77 *Unusual Foreign Body in Right Bronchus Removed by Lower Bronchoscopy. C. W. Richardson, Washington, D C
78 Labyrinthine Disease Following Chronic Suppuration (Cholesteatoma). N H. Pierce, Chicago
79 Erysipelas as a Complication of Mastoid Disease. G L Richards, Fall River, Mass
80 Etiology, Pathology, Symptoms and Diagnosis of Phlebitis and Thrombosis of the Blood Vessels when Complicating Purulent Otitis Media W. C. Phillips, New York.
81 Abscess of the Left Temporosphenoidal Lobe A. O. Pfingst, Louisville

74 **Maxillary Sinus.**—In an examination of 100 heads in the necropsy room, Tunis found that 37 per cent. showed some evidence of pathologic changes in the maxillary antra. Of these thirty-seven cases, eleven were examples of edema; twelve were examples of chronic inflammation or empyema; one was an example of an alveolar or dental cyst, and thirteen were examples of retention cyst. With one or two exceptions, all of these cases were undiagnosed during life. The presence of a large amount of pus in ten out of twelve of these cases of empyema, Tunis thinks, may have played an active part in causing the death of the patients. In this series there was no particular disease with which inflammatory conditions of the antra were associated. The cause of death in twenty-one of these 100 cases was tuberculosis, either of the respiratory or intestinal tract. Nevertheless, there was only one example of a tuberculous condition of the antral mucous membrane. All the cases of retention cyst were associated with a mild form of chronic atrophic catarrh, while several of the cases showed under the microscope a combination of a severe chronic inflammation and retention cyst. In the author's opinion the importance of antral inflammation as a factor in causing such diseases as inflammatory rheumatism, hay fever, asthma and pneumonia is frequently overlooked.

75 **Intralaryngeal Actinomycosis.**—The patient in this case, aged 19, a shoe-stainer by occupation, at home had lived on a farm and worked among horses and cattle. His family history was entirely negative, as was also his previous personal history. He first noticed a slight hoarseness, which gradually increased until he could speak only in a whisper; it was for this symptom alone that he sought relief. There was at times a slight "stinging" in the throat, which had never been more than disagreeable. There had been a slight cough and some dyspnea on exertion. His only antecedent nose and throat symptoms had been an occasional trifling epistaxis from the right nostril. Examination of the thorax was negative; the sputum was negative and the urine showed no deviation from the normal; temperature was normal; weight was 119 pounds; general appearance was good. The nose, pharynx and tonsils were absolutely normal and the teeth were in excellent condition and well cared for. The epiglottis was slightly thickened, and to the right of the median line, on the laryngeal surface, there was a small, whitish deposit. In the region of both true cords and completely covering and concealing them, were irregular masses of dirty white tissue, more than half occluding the chink of the glottis. The same sort of tissue lined the trachea as far down as Arrowsmith could see, which was but a short distance, by reason of the encroachment on its lumen by this adventitious material. The man was given vigorous antisyphilitic treatment for a month, without improvement. After he had been under observation for about three months, several portions of the laryngeal mass were removed and examined microscopically. The diagnosis of actinomycosis was then made. The patient was put on increasing doses of potassium iodid without apparent improvement, although there soon was no evidence of actinomycosis in the sputum. There were present occasional tubercle bacilli,

streptococci and groups of staphylococci. This condition gradually became worse. Physical signs of consolidation were discoverable in the right upper lobe. There was some cough, emaciation, irregularity of temperature, anorexia and digestive derangement. At the last examination, there was an area in the vault of the pharynx which presented an appearance identical with that in the larynx—previously there had been absolutely no lesion discoverable elsewhere than within the larynx. The physical signs then present were the classical ones of early pulmonary tuberculosis.

77. **Foreign Body in Right Bronchus.**—The foreign body in this case was a piece of a large rubber ink eraser.

Wisconsin Medical Journal, Milwaukee

October

82 *Wassermann Reaction in the Pathology, Diagnosis and Treatment of Syphilis. R. M. Pearce, New York.
83 *Results of Heredity and Their Bearing on Poverty, Crime and Disease. A. W. Wilmarth, Chippewa Falls.
84 Value of Orthodontia Appliances in Treating Fractures of the Maxillary Bones. M. N. Federspiel, Milwaukee.
85 *Practical Medicinal Therapeutics as It Appears from the Prescription File. J. Noer, Stoughton.

82, 83, 85. Abstracted in THE JOURNAL, July 23, 1910, pp. 343, 344.

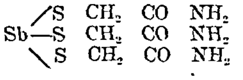
Journal of Pharmacology and Experimental Therapeutics, Baltimore

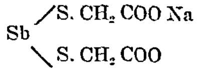
October

86 *Action of Magnesium Sulphate. S. A. Matthews and C. Brooks, Chicago.
87 *Efficacy of Antimony-Thioglycollic Acid Compounds in the Treatment of Experimental Trypanosomiasis. L. G. Rowntree and J. J. Abel, Baltimore.
88 Immunization of Animals to the Poisons in Fungi. W. W. Ford, Baltimore.
89 *Expectorants. V. E. Henderson and A. H. Taylor, Toronto, Canada.

86. **Action of Magnesium Sulphate.**—The experiments made by Matthews and Brooks tend to confirm the curare-like action of magnesium sulphate, particularly as described by the French authors. Magnesium sulphate in doses sufficient to give marked action on the motor endings, produces little effect on the respiratory center; but in larger doses it causes depression of the center. When administered to the unanesthetized dog, primary stimulation of the respiratory movements was observed. The action of magnesium on the heart is explained as that of a depression of the cardiac nervous mechanism, involving particularly the accelerators.

87. **Experimental Trypanosomiasis.**—Incident to the search for a specific against trypanosomiasis, Abel has prepared the triamid of antimony thioglycollic acid.



This compound is obtained in the form of a thick syrup or semiresinous body, which is soluble in water in all proportions, is powerfully trypanocidal, and may be administered subcutaneously in solutions 0.010 gm. to the cubic centimeter without signs of pain or local irritation. The compound tends to deposit a little sulphid of antimony on long standing, and this is readily removed by filtration. Abel says that only solutions that have been made perfectly clear by filtration should be injected subcutaneously or intravenously. As in the case of antimonials in general, only extremely dilute solutions, that is, only such as contain one-half or at most 1 milligram in the cubic centimeter, should be injected intravenously if one wishes to avoid untoward effects. Another compound used was sodium antimony thioglycollate.  made according to the directions of Klason and Carlson and of L. Ramberg. Sodium antimony thioglycollate and the triamid of antimony thioglycollic acid were used in the treatment of white rats experimentally infected with various species of trypanosomes as *T. brucei*, *T. evansi* (both surra of India and surra of Mauritius) or *T. equiperdum*. The nagana (*T. brucei*) strain used was exceedingly virulent, killing the rats in from seventy-two to eighty-four hours regularly. The surra of India strain was practically just as virulent, while that of Mauritius and that of dourine were much less virulent. An attempt was made to protect rats against infection by administering sodium antimony thioglycollate twenty-four hours previous to the intraperitoneal inoculation with trypanosomes. No protection at all was afforded, each of the three animals so treated developing the disease in the usual time. It was found, however, that the administration of either of these drugs subcutaneously at the time of the injection of the trypanosomes was always an absolute protection against infection. The time elapsing between the date of inoculation and the beginning of treatment is the most important factor in determining the results obtained in treatment; the longer the period before the institution of treatment, the smaller the degree of success from the point of view of a radical cure; the shorter the period the greater the success. Sodium antimony thioglycollate given any time within twenty-four hours after intraperitoneal inoculation furnished an absolute protection in every instance in which it was tried. The triamid was tried similarly on two rats. One had a relapse on the twelfth day, but the other is still living after two months, and exhibits no evidence of the disease. When the treatment is deferred until forty-eight hours after the infection is given, the trypanosomes in the blood are very numerous. Administration of either drug at this time will completely remove all the trypanosomes from the blood in from one and one-half to two hours, but relapses will occur in nearly every instance unless repeated doses of the drug be administered. When a moderate dose of either preparation is given at the end of forty-eight hours and repeated on the fourth, sixth and eighth days after the infection, the blood remains free from trypanosomes for a period of two, three or four weeks, and in one instance the trypanosomes never returned.

But one experiment was made to test the efficacy of these drugs in preventing infection and that was carried out as follows: A small dose of the sodium salt was given subcutaneously at the same time with the intraperitoneal inoculation with nagana. A dose of moderate size of the same salt was given on the fifth day following and again on the tenth day. In this way the disease was entirely prevented, no trypanosomes appeared in the blood and repeated subinoculations into rats have given only negative results. Rabbits tolerate the antimonials better than the dog. These results in the way of treatment compare so favorably with those obtained by others in the use of the antimonials or arsenicals of the day in experimental trypanosomiasis that a trial of the antimony thioglycollates in human trypanosomiasis and in the trypanosomic diseases of the larger animals would seem to be justified. The authors claim that in the case of the equidæ and bovidæ these drugs may be found to be of service as prophylactic agents during periods of exposure to infection in traversing a "fly region." Their relatively low cost and their ability to induce drug resistance in trypanosomes are factors worthy of consideration in this connection. It is not claimed that these antimonials are more efficacious in the long run as therapeutic agents than those hitherto used, but that it is certainly worth while to enlarge the number of trypanocidal drugs, especially if their toxicity is less marked than that of their predecessors, or if they are better adapted for subcutaneous injection.

89. **Expectorants.**—Henderson and Taylor found that if iodids produce an increase in bronchial secretion, it must be brought about reflexly. Ammonium compounds increase secretion reflexly and possibly to a limited extent by an action on the bronchial gland center if very large doses are given. Antimony and ipecac and senega produce bronchial secretion reflexly. Emetin has a central action as well. Apomorphin stimulates the bronchial gland center. Pilocarpin stimulates the bronchial glands peripherally and atropin depresses them.

Annals of Otology, Rhinology and Laryngology, St. Louis

September

90 Subperiosteal Abscess of the Mastoid Region. H. Mygind, Copenhagen.
91 Operative Procedure of Brain Abscess of Otitic Origin. L. W. Dean, Iowa City.
92 Resection of Bony Deflections of the Nasal Septum. O. T. Freer, Chicago.

93 Laboratory Aids to Otologic Diagnosis. F. E. Sondern, New York.
94 Quinin and Urea Hydrochlorate as a Local Anesthetic. E. F. Ingals, Chicago.
95 Manifestations of Recurrent Influenza in the Nose and Throat. J. L. Goodale, Boston.
96 Laryngitis Dolorosa. W. Freudenthal, New York.
97 Physiology of the Cochlea. G. E. Shambaugh, Chicago.
98 Black Tongue: Lingua Nigra Villosa. C. H. Knight, New York.
99 Carcinoma of the Uvula. E. M. Holmes, Boston.
100 Syphilitic Stenosis of the Nasopharynx. J. M. Ingersoll, Cleveland.
101 Otitic Meningitis. J. E. Sheppard, Brooklyn.
102 Vincent's Angina Involving the Larynx Exclusively. H. Arrowsmith, Brooklyn.
103 Tympanic Vertigo. J. E. Sheppard, Brooklyn.
104 Diagnosis and Treatment of Acute Infection of the Larynx. F. E. Hopkins, Springfield, Mass.
105 Recurrent Papilloma of the Larynx. F. R. Packard, Philadelphia.
106 Submaxillary Abscess Caused by the Use of an Infected Toothpick. C. P. Jones, Newport News.
107 Respiratory and Vocal Symptoms in Papillomata of the Larynx. G. Hudson-Makuen, Philadelphia.
108 Tuning-Fork Tests with a Special Auscultation Tube. L. M. Hubby, New York.
109 Abducens Paralysis and Suppurative Otitis Media. C. E. Perkins, New York.
110 Abscess of the Larynx. J. S. Waterman, Brooklyn.

Montreal Medical Journal

October

111 *Pneumococcus Polyarthritis. A. H. MacCordick, Montreal.
112 Theories on the Nature of Shock. E. H. Falconer.
113 *Accidental Division of Ureter with End-to-End Anastomosis. E. J. Williams, Sherbrooke, Quebec.
114 Anesthesia—The Psychologic Bugbear of Surgery. R. Monahan, Montreal.
115 Reactionary Teaching Concerning Summer Diarrheas. S. Ortenberg, Montreal.

111. **Pneumococcus Polyarthritis.**—In four of the cases reported by MacCordick the patients had a previous history of acute rheumatism and one had chorea. In four the arthritis preceded other affections by an average period of about six days, and in one case the arthritis occurred three days after the onset of pneumonia. Two of these patients developed bronchopneumonia, one lobar pneumonia, and all had acute and chronic endocarditis. The two patients without pneumonia simulated closely in their course acute rheumatic fever. The organism isolated in this series of cases corresponds to the pneumococcus in every respect. The only points of special interest are low virulence for animals and unusual vitality on culture media in the case of the organisms obtained from fatal cases.

In reviewing the bacteriologic reports, it was found that only in two cases were the organisms found in blood cultures taken before death. In all it was isolated from the heart's blood after death. In the first four cases it was found in the fluid from the last affected joint. In two it was obtained from the pericardium; in one from the myocardium, and in one from the exudate over the brain and cord. From bacteriologic observations made on the cases reported and on several nonfatal cases in the wards, MacCordick says that it would appear that the disease was due to an organism of low virulence, which produces an arthritis from which it cannot easily be isolated, but that the virulence may increase so as to produce cardiac and pulmonary lesions and even death.

113. **Accidental Division of Ureter.**—This was a case of large multilocular cyst, the size of a fetal head, situated between the layers of the broad ligament on the right side. There were extensive adhesions to the pelvic brim and surrounding structures. In the attempt to free the adhesions from the pelvic brim, with round-pointed scissors, the ureter was divided completely. This was at a point 1 inch internal to its natural course. It was firmly adherent to the thick cyst wall. The ureter was dissected back for three-eighths of an inch in each direction, then tension sutures placed in the masses on either side, and drawn up, thus relieving all strain on the ureter. An end-to-end anastomosis was then done, using two interrupted sutures of fine silk on either side of the ureter, while a fine continuous suture of the same material was lightly applied around the line of division, passing through all the coats except the mucosa. The patient made an uneventful recovery, and has had absolutely no trouble referable to the pelvic or renal regions, up to one year after the operation.

Journal of Advanced Therapeutics, New York

October

116 Physics of Light and Electrotherapy. T. D. Crothers, Hartford, Conn.
117 *Physical Forces in Tuberculosis. C. Pope, Louisville, Ky.

117. Also published in the *Lancet-Clinic*, Oct. 8, 1910.

Detroit Medical Journal

October

118 Experiences in 300 Eye, Ear, Nose and Throat Surgical Cases. D. M. Campbell, Detroit.
119 The Tonsil Question. E. Amberg, Detroit.
120 The Wayne County Medical Society. A. D. Holmes, Detroit.
121 Fractures of the Patella. G. H. Palmerlee, Detroit.

Medical Fortnightly, St. Louis

October 25

122 *Rôle of Physician, Philanthropist, Publicist and Politician Regarding a Federal Department of Health. L. H. Montgomery, Chicago.
123 Is the Concept of Life Inclusive of Metabolism, or is Epigenesis in Force and in the Inclusion? J. Clements, Wichita, Kan.
124 A Newer Cleanliness. A. L. Benedict, Buffalo, N. Y.

122. Also published in the *Lancet-Clinic*, Oct. 22, 1910.

American Journal of Medical Sciences, New York

November

125 *Uric Acid in Gout. A. Magnus-Levy, Berlin.
126 *The Electrocardiogram in Clinical Medicine. W. B. James and H. B. Williams, New York.
127 *Ipecac in Treatment of Intestinal Amebiasis. W. V. Brem and A. H. Zeiler, Cristobal, Canal Zone.
128 Treatment of Arthritis Deformans. C. E. Skinner, New Haven, Conn.
129 *Leg and Arm Phenomena in Tetany. E. H. Pool, New York.
130 *Significance of Cardiorespiratory and Subclavian Artery Murmurs. H. R. M. Landis and S. A. Munford, New York.
131 *Prognosis in Chronic Valvular Disease of the Heart. H. B. Allyn, Philadelphia.
132 Intestinal Obstruction. J. N. Hall, Denver, Colo.
133 Idiopathic Circumscribed Spinal Serous Meningitis. T. H. Weisenburg and G. P. Müller, Philadelphia.
134 Dermatitis Herpetiformis in Early Childhood. R. L. Sutton, Kansas City, Mo.
135 Retention Cysts of the Kidney. G. G. Ross, Philadelphia.

125. **Uric Acid in Gout.**—This is a review of present knowledge of gout, but nothing new is offered.

126. **Electrocardiogram in Clinical Medicine.**—According to James and Williams, the string galvanometer, as an instrument of precision for original study, leaves little to be desired. The ease with which it may be adjusted to standard sensitiveness, and the rapidity with which the photographic records may be made, presents a striking contrast to the technical difficulties of many physiologic methods. Once the apparatus is properly installed, comparatively little skill is required to manipulate it, and this may be readily acquired with practice. In common with all delicate and somewhat complicated physical apparatus, it is liable to occasional derangement, a liability which can be minimized by very careful attention to the original installation. When trouble does occur, it may require a rather intimate knowledge of the principles involved to ascertain its nature and make the necessary adjustments. To those who are interested in the prosecution of original study, and who are able and willing to devote a good deal of time to such work, the authors recommend the method as well worth while. It seems probable that its most important field of usefulness, so far as clinical medicine is concerned, will be the clearing up of morbid phenomena now little understood, and that once the explanations have been given, the clinician will no longer need this complicated apparatus to enable him to recognize and understand the conditions it has explained. Just how much information regarding the effect of treatment in disease of the heart can be obtained by the use of this method cannot as yet be stated, but it seems likely that there is opportunity for fruitful work in that direction. One of the chief merits of the method is that it makes possible the study of cardiac pathology from the functional as well as anatomic standpoint. That the galvanometer may prove a great aid in the diagnosis of an occasional obscure case, experience has shown; but considered simply as an aid to diagnosis, its cost and the time requisite to secure the necessary familiarity with its manipulation will preclude its extensive use.

127. **Intestinal Amebiasis.**—Brem and Zeiler have apparently cured fourteen amebic infections with ipecac: eight with dysentery, followed from six weeks to five and one-half months

with repeated examinations for amebæ; three with dysentery, followed less than six weeks; three without dysentery, followed from two to five months. They have failed to eradicate the infection in four cases, but these patients were not thoroughly treated. The thickness of the salol coat of the ipecac pills must be carefully regulated so as to prevent vomiting on the one hand, and on the other, the passage of intact pills through the intestinal canal. Probably the best dosage and method of administration is to begin with 60 or 80 grains at bedtime and decrease the dose 5 grains daily until a dose of 10 grains is reached. Rapid cures may sometimes be effected by giving 40 grains three times during twenty-four hours. The patient should be at rest in bed and on liquid diet; no solid food or milk should be given for at least six hours previous to the ipecac, and no liquids for three hours previous. No opiate is necessary. The authors' experience indicates that a large proportion of amebic infections can be eradicated by ipecac treatment.

129. **Leg and Arm Phenomena in Tetany.**—Pool again calls attention to a case reported in 1906, in which, among the significant features of the disease, were frequent attacks of symmetrical and bilateral tonic contractures of the hands and feet and the presence of Chvostek's and Trousseau's signs, the latter being characterized by slow contractions accompanied and preceded by cramp-like pains. Contractures also resulted from making the sciatic nerve tense by holding the patient in a sitting position, so that the trunk and thighs were flexed beyond a right angle, with the legs extended; or by putting the nerves of the brachial plexus on the stretch by elevating the arm above the head with the forearm extended (extreme abduction). The contracted muscles were always board-like to the touch.

130. **Cardiorespiratory Murmurs.**—In 228 apparently normal individuals (ninety-five males, 133 females) a cardiorespiratory murmur was heard in but two instances. These patients were examined but once, in the erect posture and during normal respiration and during deep breathing. Of twenty-six general medical cases (twenty-one males, five females), cardiorespiratory murmurs were heard seven times. In four instances the murmur seemed dependent on a tachycardia; two of these patients (females) had exophthalmic goiter, while the other two (males) had a murmur, apparently due to nervous palpitation, which disappeared as the heart quieted down. In the other three the condition present was chronic gastritis, aortic regurgitation, and a convalescent pneumonia in which the left base had been involved. Of seventy-four tuberculous cases, (forty-five males, twenty-nine females), a cardiorespiratory murmur was present twenty-nine times (twenty-three males, six females). Of 143 cases, representing a variety of conditions, but for the most part cases of tuberculosis, specifically examined for a cardiorespiratory murmur, the murmur was heard in thirty-two instances. Of this number, sixteen had undoubted tuberculosis. Observations were also made on 1,552 men entering the freshmen class of Cornell University in the fall of 1909. In the examination of these cases the excitement incident to the ordinary medical case is almost negligible. After auscultation of the heart and lungs, the students were required to "chin" themselves as often as possible, and then the heart and lungs were again auscultated. In many instances murmurs were then heard which had not been noticed previously. Cardiorespiratory murmurs were heard in 181 instances (11.8 per cent.). In addition to these 181 transient cardiorespiratory murmurs, there were 117 instances of accidental murmurs, apparently endocardial in origin. In all, there were 131 cases in which a subclavian murmur was heard: males, twenty-three, females, eight; tuberculous cases, twenty; non-tuberculous cases, eleven; murmur on the right side only, eight; murmur on the left side only fourteen; murmur on both sides, nine: murmur during inspiration only, twenty-three; murmur during expiration only, six; murmur during both, two; tuberculous disease of the right apex, eight; tuberculous disease of the left apex, two; tuberculous disease of both apices, five. In two cases change of posture influenced the murmur; in one the murmur disappeared in the recumbent posture, while in the other the recumbent posture brought the murmur out. In seven cases a cardiorespiratory murmur was also present.

131. **Prognosis in Chronic Valvular Disease.**—Allyn holds that the prognosis of chronic valvular disease of the heart in private practice is much better, both as to duration and capacity for work, than most persons realize. It is no uncommon experience to find persons who have sustained these lesions for ten, fifteen and twenty years, in some cases much longer, without either great discomfort or great impairment of activity. The patients who sustain these lesions longest and with least embarrassment are those of temperate habits and spare build who do not easily become angered or worried and who are controllable as to their mode of life and activities. Those who can lead a quiet, sheltered, protected life naturally live the longest. When death occurs it is usually the result of some accident or intercurrent disease, not directly from the heart. In estimating the prognosis in a particular case, Allyn says that one needs to keep in mind the distinction between a heart lesion and heart disease. So long as there is only a lesion the prognosis is good. A lesion ceases to exist and disease sets in when the heart enlarges and subjective symptoms appear. In his opinion, subjective symptoms are better guides to the functional energy of the heart and to its lasting power than are objective signs. In angina pectoris the duration may be five years instead of the conventional one or two, just as some cases of aortic insufficiency may, under favorable conditions, last for thirty or forty years instead of ten years.

Alabama Medical Journal, Birmingham

October

136 Toxemia of Pregnancy. M. D. Thomas, Birmingham.
137 Application of the Tuberculin Test in City Milk Inspection. E. M. Duncan, B[illegible]
138 Poliomyelitis; [illegible] Misconception About Treatment. [illegible] D. C.
139 Cutaneous Lesi[illegible]ian, Birmingham.

Woman's Medical Journal, Cincinnati

October

140 Labrador: Its Interests, Hospitals, etc. E. E. Musson, Philadelphia.
141 Physical Therapy. L. O. B. Burbank, Waltham, Mass.

Journal of the Michigan State Medical Association, Battle Creek

November

142 Cancer. G. W. Crile, Cleveland.
143 *Uses of Solid Carbon Dioxid and an Instrument for Collecting and Moulding the Snow. A. P. Biddle and R. A. C. Wollenberg, Detroit.
144 Tonsillectomy. B. R. Shurly, Detroit.
145 Gonorrheal Salpingitis, Especially Prophylaxis and Treatment. T. A. McGraw, Detroit.
146 *Differential Diagnosis of Organic and Functional Diseases of the Stomach. J. E. Davis, Detroit.
147 Action and Uses of the Adrenal Principle. W. J. Wilson, Jr., Detroit.
148 *Family Physician Refracting as a Factor in Medical Practice, and Its Promotion During 1910. L. Connor, Detroit.

143. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1585.

146. Abstracted in THE JOURNAL, Nov. 5. 1910, p. 1674.

148. Also published in the *Lancet-Clinic*, Oct. 15, 1910.

Journal of the Medical Society of New Jersey, Orange

November

149 Surgical Mishaps. F. D Gray, Jersey City.
150 Spontaneous Cure of Malignant Disease. A. Marcy, Jr., Riverton.
151 Stenosis of the Respiratory Vestibule. E. Marvel, Atlantic City.
152 Milk. A. McAlister, Camden.
153 Cystitis Coli in Women: Its Etiology, Symptomatology and Treatment. G. N. J. Sommer, Trenton.

American Journal of Surgery, New York

October

154 Bismuth Paste Injections in Nasal Accessory Sinus Diseases. J. H. Beck, Chicago.
155 Bismuth Paste Treatment of Chronic Sinuses. H. Aranow, New York.
156 Chronic Catarrhal Otitis Media and Otosclerosis. W. S. Bryant, New York.
157 Treatment of Chronic Catarrhal Otitis and Otosclerosis. E. P. Fowler, New York.
158 Importance of the Clinical Laboratory in Surgery. H. R. Harrower, Chicago.
159 Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
160 Perforation of the Ileum, with Strangulated and Obstructed Hernias. A. E. Sellenings, New York.

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23 Psychologic Treatment of Certain Functional Conditions E Ash
24 Knee Jerk and Simple Reflexes W. A Jolly.
25 Sclerosis of the Adventitia. A Bruce

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Case 4.—Right-sided intracerebellar tumor: The patient had marked optic neuritis in both eyes. The visual fields were normal. Smell, taste, and hearing were acute on both sides There was doubtful unsteadiness of the right hand on touching the nose. The gait was reeling and unsteady, the patient lurching to the right, and the right leg was more unsteady than the left on touching the opposite knee The reeling gait and the unsteadiness of the right arm and leg pointed to a right sided cerebellar lesion, which was confirmed at operation.

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Case 9.—Left sided bulbar thrombosis: The symptoms in this case pointed clearly to a lesion in the left ponto medullary angle, apparently of the nature of a syphilitic thrombosis of the posterior inferior cerebellar artery, interrupting the path for temperature and pain from the opposite side of the body, and leaving unaffected that for tactile sense, which runs more mesially in the formatio reticularis. The lesion also implicated the part of the vagal nucleus (nucleus ambiguus) associated with the motor innervation of the palate, which cleared up, and of the vocal cord, which remained paralyzed. At the time of onset, the adjacent inferior peduncle of the cerebellum was also temporarily implicated, producing the reeling and forced movements to the left, nystagmus, and vertigo, while there appears to have been some interference with the pyramidal paths, which largely cleared up.

Case 10.—Left-sided thrombosis of medulla.

Case 11.—Right sided extramedullary lesion; caries of sphenoid bone.

Case 12.—Extramedullary gumma of right side of medulla.

5. Stroma of the Endometrium.—The following summary of his paper is made by Young:

1 The stroma of the endometrium consists of a soft semifluid protoplasmic mass imperfectly differentiated into cellular elements

2 The cells anastomose freely with each other by means of protoplasmic processes They present many and varying alterations in shape, but these are easily dispelled, and the cells then approximate to the typical stellate shape The differentiation of the stroma cells is thus probably more apparent than real

3 The intercellular spaces, in all probability, do not communicate directly with one another The anastomosing processes are not, as is usually stated, filaments, but films of protoplasm, which under ordinary circumstances close in the fluid cavities

4 The intima and media of the vessels are nothing more than ordinary flattened stroma cells This shape they easily lose

5 Except in the deepest layers of the mucosa the vessels have no specialized supporting coats (muscle, elastic tissue).

6 The vessels are obviously so constructed as to allow a ready and universal opening up of their walls, and the structure and consistence of the stroma such as to permit its ready displacement by fluid or blood

7 The edematous infiltration of the tissues which precedes the hemorrhagic escape, is due neither to a mechanical displacement or filtration of fluid from the vessels, nor to a secretory activity of the intimal cells It is dependent on protoplasmic changes, which result in an active inhibition of fluid from the vessels, by a process of osmosis So far as is at present known, this change is due to a widespread liberation of crystalloidal elements in the tissues.

8. The infiltration of the stroma with blood corpuscles is, in all probability, due to exactly the same cause. In consequence of its peculiar structure, the uterine mucosa must be looked on, throughout its entire extent, as a potential blood sponge.

In conclusion, Young states that his investigations have revealed that the peculiar structural conformation of the endometrium is intimately bound up with the changes which occur during pregnancy. The vascular gaping round the young ovum occurs in a manner identical in nature to, and differs only in degree from, the mode in which the vessels open up during menstruation.

12. **Intestinal Obstruction Due to the Uterus.**—The first case reported by Gottschalk was as follows: Four years ago the patient had undergone a laparotomy operation for right adnexal tumor, probably gonorrheal. The closed left Fallopian tube had been opened by salpingostomy in order to create a possibility for conception. The consequence was that on the left side numerous peritoneal adhesions formed, and the newly-formed ostium of the tube was again closed definitely through adhesion with the adjoining sigmoid flexure. The strong left peritoneal adhesions, easily inflamed, Gottschalk believes, allow the induction that from the artificial ostium infectious micro-organisms emigrated into the pelvic cavity in a secondary manner; the extended formation of adhesions had nothing to do directly with the laparotomy, otherwise, no doubt, they would have established themselves on the right side, where the diseased adnexa were removed, and in the neighborhood of the laparotomy wound. There was no sign of any adhesive formations. There remained a void space, because on the right side no adhesions formed; through this hole the loop of the ileum slipped into Douglas's pouch, which was surmounted by adhesions and by the retroverted and fixated uterus. The retroversion was formed in a secondary manner in connection with the operation, no doubt on account of the pelvic peritonitis of the left side. The case is of importance, not alone through the strangulation of the ileum by the retroverted uterus, but because it shows that salpingostomy is not without danger under certain circumstances—namely, that inflammatory micro-organisms may penetrate through the new ostium into the pelvic cavity. The case, therefore, serves as a warning example to be very careful with the indication for salpingostomy. It also shows how difficult it is to predict in advance whether an artificial tube ostium will remain open. In the second case reported obstruction was due to a retroverted puerperal uterus.

Lancet, London

October 22

26 Aspects of Heredity in Relation to Mind. H. B. Donkin.
27 The Royal Navy Medical Service. J. Durnford.
28 rlich's "606." J. E. R. McDonagh.
29 H. Lett.
30 Nettlerash and Asthma. G. Billard.
31 *Three Cases of Thrombosis of the Lateral Sinus. J. W. Wood.
32 Treatment of Asiatic Cholera with an Anti-Endotoxic Serum. R. T. Hewlett.
33 Action of Chlorin on Water Containing the Cholera Vibrio. H. W. Harding.

31. **Thrombosis of the Lateral Sinus.**—The first case reported by Wood was a fairly typical case of thrombosis of the lateral sinus. The following are the main points of importance: (1) Cessation of discharge; (2) sudden onset of pain behind the ear; (3) tenderness along the internal jugular vein; (4) shivering (rigors); (5) Griesinger's symptom (tenderness and slight edema over the site of the emissary vein, although no tenderness or swelling over the mastoid antrum); (6) the disc normal; (7) consciousness unimpaired.

In the second case, a diagnosis of meningitis was made. Meningitis was present, but in addition there was a completely thrombosed sinus, a perisinus abscess and an extradural abscess. The points in favor of meningitis were: (1) continuous high fever and no rigors until after the operation; (2) the dull and drowsy condition of the patient; (3) the head retraction with pain on movement; (4) the lumbar puncture; (5) optic neuritis. During the further progress of the case several points suggested either an extradural abscess or a brain abscess. They were: the sub-normal temperature and pulse; the ocular paresis; the condition of the reflexes; headache and vomiting; hemorrhage into the left optic disc; and the variable amount of discharge from the mastoid wound. The giddiness and the nystagmus were most likely due to a localized labyrinthitis caused by an injury to the labyrinth during the first operation. The absence of rigors with a totally blocked sinus is worthy of note.

The principal points of note in the third case were: (1) the remittent temperature with free perspiration, but absence of rigors; (2) the headache and sickness; (3) the absence of optic neuritis; (4) the presence of Kernig's sign, but no symptoms of meningitis beyond this; and (5) the absence of Griesinger's symptom. In none of these cases was the internal jugular vein tied. Wood says, should rigors continue after opening the lateral sinus and the removal of clot, whether septic or not, then, and not before, is the time to ligate the vein.

Journal of Tropical Medicine and Hygiene, London

October 15

34 *A Rare Case of Tumors. R. H. Castor.
35 Investigation of Pellagra. L. W. Sambon.

34. **Tumors.**—In this patient there were fibroma, "fibrifyingsarcoma" (fibrosarcoma?), neurofibroma, and a large lipoma. One tumor was an ovoidal hard mass occupying the whole of the left shoulder and more. The skin over it was moveable. It was about the size of a large cocoanut, with a distinct lobulated feel. There was slight glandular enlargement in the axilla, but there was nothing to note in the glands of the neck. It was not tender to the touch, but adherent to the parts around. The joint was freely moveable in all directions. A second ovoidal mass occupied the root of the neck on the right side. There was only partial fixation of the neck on this side, but no enlarged glands were detected. The largest tumor in the series lay just below tumor No. 1 and descended in molluscum-like folds to below the left hip of the patient. At its base it was 8 inches long, and was practically a continuation of the anterior and posterior folds of the axilla. Its widest circumference was 30 inches, and its length from the spine of the scapula to the lowest point was 15 inches. It hung like an ordinary satchel, and when grasped and lifted weighed very heavy. The tumor was almost covered with nodules, much larger than those seen in tumors Nos. 1 and 2, and the largest was almost the size of a small apple. Many of them were soft to the touch and sessile, others were distinctly pedunculated, but all were covered with skin. Large blood-vessels were seen discoursing over and around some parts of the tumor. The part of the tumor free from these nodules was that portion of it adjacent to the skin on the side of the patient where the skin was quite smooth.

Septic changes were chiefly seen in the middle folds of the tumor. It was on the whole firm and hard to the touch, but not tender. Its consistence varied, and some of the deeper portions of it were soft. A rather large, hard moveable tumor about the size of a small melon grew apparently from the under and lower portion of tumor No. 2, but was encapsuled and distinct from it. Tumor No. 5 was similar in appearance to No. 4. It was larger in size and partly obscured by No. 3 before it was removed. The skin over it was normal. It bore the usual clinical features of a fatty tumor. The four tumors first mentioned were removed, the patient making an uneventful recovery. The diagnosis was made microscopically.

Medical Press and Circular, London

October 19

36 Vision. W. R. MacDermott.
37 Symptoms and Treatment of Duodenal Ulcer. R. J. M. Buchanan.

Journal of Obstetrics and Gynecology of the British Empire, London

October

38 *Hemeotoxic Nature of Eclampsia. H. L. Murray.
39 *Cysts of the Ovaries and Fallopian Tubes. A. Keith and A. Doran.
40 Annual Variation of the Birth-Rate in the Government Maternity Hospital, Madras. G. G. Giffard and H. Ll. Jones.

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Case 12.—Extramedullary gumma of right side of medulla.

5. **Stroma of the Endometrium.**—The following summary of his paper is made by Young:

1. The stroma of the endometrium consists of a soft semifluid protoplasmic mass imperfectly differentiated into cellular elements.
2. The cells anastomose freely with each other by means of protoplasmic processes. They present many and varying alterations in shape, but these are easily dispelled, and the cells then approximate to the typical stellate shape. The differentiation of the stroma cells is thus probably more apparent than real.
3. The intercellular spaces, in all probability, do not communicate directly with one another. The anastomosing processes are not, as is usually stated, filaments, but films of protoplasm, which under ordinary circumstances close in the fluid cavities.
4. The intima and media of the vessels are nothing more than ordinary *flattened stroma cells. This shape they easily lose.*
5. Except in the deepest layers of the mucosa the vessels have no specialized supporting coats (muscle, elastic tissue).
6. The vessels are obviously so constructed as to allow a ready and universal opening up of their walls, and the structure and consistence of the stroma such as to permit its ready displacement by fluid or blood.
7. The edematous infiltration of the tissues which precedes the hemorrhagic escape, is due neither to a mechanical displacement or filtration of fluid from the vessels, nor to a secretory activity of the intimal cells. It is dependent on protoplasmic changes, which result in an active inhibition of fluid from the vessels, by a process of osmosis. So far as is at present known, this change is due to a widespread liberation of crystalloidal elements in the tissues.

8 The infiltration of the stroma with blood corpuscles is in all probability, due to exactly the same cause In consequence of its peculiar structure, the uterine mucosa must be looked on, throughout its entire extent, as a potential blood sponge

In conclusion, Young states that his investigations have revealed that the peculiar structural conformation of the endometrium is intimately bound up with the changes which occur during pregnancy. The vascular gaping round the young ovum occurs in a manner identical in nature to, and differs only in degree from, the mode in which the vessels open up during menstruation.

12. **Intestinal Obstruction Due to the Uterus**—The first case reported by Gottschalk was as follows Four years ago the patient had undergone a laparotomy operation for right adnexal tumor, probably gonorrheal The closed left Fallopian tube had been opened by salpingostomy in order to create a possibility for conception The consequence was that on the left side numerous peritoneal adhesions formed, and the newly formed ostium of the tube was again closed definitely through adhesion with the adjoining sigmoid flexure The strong left peritoneal adhesions, easily inflamed, Gottschalk believes, allow the induction that from the artificial ostium *infectious micro organisms emigrated into the pelvic cavity* in a secondary manner; the extended formation of adhesions had nothing to do directly with the laparotomy, otherwise, no doubt, they would have established themselves on the right side, where the diseased adnexa were removed, and in the neighborhood of the laparotomy wound There was no sign of any adhesive formations There remained a void space, because on the right side no adhesions formed; through this hole the loop of the ileum slipped into Douglas's pouch, which was surmounted by adhesions and by the retroverted and fixated uterus The retroversion was formed in a secondary manner in connection with the operation, no doubt on account of the pelvic peritonitis of the left side The case is of importance, not alone through the strangulation of the ileum by the retroverted uterus, but because it shows that salpingostomy is not without danger under certain circumstances—namely, that inflammatory micro organisms may penetrate through the new ostium into the pelvic cavity The case, therefore, serves as a warning example to be very careful with the indication for salpingostomy. It also shows how difficult it is to predict in advance whether an artificial tube ostium will remain open. In the second case reported obstruction was due to a retroverted puerperal uterus

Lancet, London

October 22

26 Aspects of Heredity in Relation to Mind H B Donkin
27 The Royal Navy Medical Service J Durnford
28 Further Experiences with Ehrlich's '606' J E R McDonagh
29 Benign Cyst of the Humerus H Lett
30 Anaphylaxia in Hay Fever, Nettlerash and Asthma G Billard
31 *Three Cases of Thrombosis of the Lateral Sinus T W Wood
32 Treatment of Asiatic Cholera with an Anti Endotoxic Serum R T Hewlett
33 Action of Chlorin on Water Containing the Cholera Vibrio H W Harding

31 **Thrombosis of the Lateral Sinus**—The first case reported by Wood was a fairly typical case of thrombosis of the lateral sinus The following are the main points of importance· (1) Cessation of discharge, (2) sudden onset of pain behind the ear; (3) tenderness along the internal jugular vein; (4) shivering (rigors); (5) Griesinger's symptom (tenderness and slight edema over the site of the emissary vein, although no tenderness or swelling over the mastoid antrum), (6) the disc normal, (7) consciousness unimpaired

In the second case, a diagnosis of meningitis was made Meningitis was present, but in addition there was a completely thrombosed sinus, a perisinus abscess and an extra dural abscess The points in favor of meningitis were· (1) continuous high fever and no rigors until after the operation, (2) the dull and drowsy condition of the patient, (3) the head retraction with pain on movement, (4) the lumbar puncture, (5) optic neuritis. During the further progress of the case several points suggested either an extradural abscess or a brain abscess. They were. the sub normal temperature and pulse, the ocular paresis; the condition of the reflexes, headache and vomiting; hemorrhage into the left optic disc, and the variable amount of discharge from the mastoid wound The giddiness and the nystagmus were most likely due to a localized labyrinthitis caused by an injury to the labyrinth during the first operation. The absence of rigors with a totally blocked sinus is worthy of note

The principal points of note in the third case were: (1) the remittent temperature with free perspiration, but absence of rigors, (2) the headache and sickness, (3) the absence of optic neuritis, (4) the presence of Kernig's sign, but no symptoms of meningitis beyond this, and (5) the absence of Griesinger's symptom In none of these cases was the internal jugular vein tied Wood says, should rigors continue after opening the lateral sinus and the removal of clot, whether septic or not, then, and not before, is the time to ligate the vein

Journal of Tropical Medicine and Hygiene, London

October 15

34 *A Rare Case of Tumors R H Castor
35 Investigation of Pellagra L W Sambon

34 **Tumors**—In this patient there were fibroma, "fibrifyingsarcoma" (fibrosarcoma?), neurofibroma, and a large lipoma One tumor was an ovoidal hard mass occupying the whole of the left shoulder and more The skin over it was moveable It was about the size of a large cocoanut, with a distinct lobulated feel There was slight glandular enlargement in the axilla, but there was nothing to note in the glands of the neck It was not tender to the touch, but adherent to the parts around The joint was freely moveable in all directions A second ovoidal mass occupied the root of the neck on the right side There was only partial fixation of the neck on this side, but no enlarged glands were detected. The largest tumor in the series lay just below tumor No 1 and descended in molluscum like folds to below the left hip of the patient At its base it was 8 inches long, and was practically a continuation of the anterior and posterior folds of the axilla Its widest circumference was 30 inches, and its length from the spine of the scapula to the lowest point was 15 inches It hung like an ordinary satchel, and when grasped and lifted weighed very heavy The tumor was almost covered with nodules, much larger than those seen in tumors Nos 1 and 2, and the largest was almost the size of a small apple Many of them were soft to the touch and sessile, others were distinctly pedunculated, but all were covered with skin Large blood vessels were seen discoursing over and around some parts of the tumor The part of the tumor free from these nodules was that portion of it adjacent to the skin on the side of the patient where the skin was quite smooth

Septic changes were chiefly seen in the middle folds of the tumor It was on the whole firm and hard to the touch but not tender Its consistence varied and some of the deeper portions of it were soft A rather large, hard moveable tumor about the size of a small melon grew apparently from the under and lower portion of tumor No 2 but was encapsuled and distinct from it Tumor No. 5 was similar in appearance to No 4 It was larger in size and partly obscured by No 3 before it was removed. The skin over it was normal. It bore the usual clinical features of a fatty tumor The four tumors first mentioned were removed, the patient making an uneventful recovery The diagnosis was made microscopically

Medical Press and Circular, London

October 19

36 Vision W R MacDermott
37 Symptoms and Treatment of Duodenal Ulcer R J M. Buchanan

Journal of Obstetrics and Gynecology of the British Empire, London

October

38 *Hemeotoxic Nature of Eclampsia H J Murray
39 *Cysts of the Ovaries and Fallopian Tubes A Keith and A. Doran
40 Annual Variation of the Birth Rate in the Government Maternity Hospital, Madras G G Giffard and H. Ll Jones

38 **Nature of Eclampsia.**—Experiments which he carried out, in Murray's opinion, seemed to prove conclusively that it was the autolytic rather than the purely placental element which produced the anaphylaxis. Liver was substituted for placenta. Three guinea-pigs received intraperitoneally 0.5 c.c., 1 c.c. and 2 c.c. respectively of a fresh emulsion of one-half of a guinea-pig's liver, in 40 c.c. saline and three weeks later 10 c.c. of a fresh emulsion of guinea-pig's liver in 25 c.c. saline, without obvious result. On the other hand, two pigs receiving, at the same interval of time, the same amounts of liver which had been allowed to autolyze in an incubator for twenty-four hours at 37 C. showed undoubted anaphylaxis, consisting of cough, nasal irritability, respiratory embarrassment, paralysis of the hind legs, and, in one case, of slight clonic convulsions. A control showed that the amount of autolyzed liver given was not directly toxic in a single dose. Two guinea-pigs were given intraperitoneally 3 c.c. and 4 c.c. respectively of the serum taken post-mortem from the heart of a fatal case of eclampsia. Two days later each received 10 c.c. of normal amniotic fluid, without result. A third guinea-pig, which received as a first dose 4 c.c. of the fluid from the peritoneal cavity and the above dose of amniotic fluid, remained quite unaffected. There is, then, says Murray, but little satisfactory evidence that eclampsia is anaphylactic in nature. Clinically, too, the picture of anaphylaxis does not greatly resemble it, and, convulsions apart, they have little in common. A guinea-pig with the paralytic train of symptoms most marked is alive to external stimuli, and will endeavor to crawl toward its cage while any motor power remains—a marked contrast to the dazed mental state of eclamptics. The pre-eclamptic state, also, has no counterpart in the anaphylactic condition; and, finally, undoubted anaphylaxis, as seen in the human subject, is very dissimilar to the laboratory picture.

39 **Cysts of Appendages.**—After careful study of specimens and consideration of the anatomy and embryology of all structures concerned, Keith and Doran classify broad ligament cysts as follows:

1. The cyst of the lower end of the ovarian fimbria, originating in a homologue of the rete testis in the male, some tubular or cystic relic in the hilum tissue of the ovary which extends into this part of the ovarian fimbria. From this cyst arises the common cystic tumor of the broad ligament, the "parovarian cyst" of gynecologists and surgeons.

2 The cyst of the Wolffian body, developed from one of its vertical tubes. This is, therefore, truly parovarian. No authentic instance of a cyst of this type becoming a large tumor has ever been reported.

3 The cyst of an accessory tubal ostium, the "accessory hydrosalpinx" of Handley.

4 Lastly, the "hydatid of Morgagni," and the similar pyriform pedunculated cyst running outward from the horizontal tube of the parovarium. The authors hold that these are neither Müllerian nor Wolffian, but are relics of the pronephros. To the same origin Kobelt's tubes may probably be traced.

Clinical Journal, London

October 19

41 Carcinoma of the Stomach. J Sherren.
42 Non Malignant Stricture of the Rectum. F C Wallis.

Bulletin de l'Académie de Médecine, Paris

October 4, LXXIV, No 30, pp 119-174

43 *Detection of Simulated Deafness. (Contribution à la séméiologie de la surdité.) A Weiss.
44 Hectine versus Ehrlich's "606" in Abortive Treatment of Syphilis. H Hallopeau.
45 *Inflammatory Tuberculosis and Scoliosis. A. Poncet and R Leriche.
46 *Ultimate Results of Gastrectomy. J Boeckel.
47 *General Spinal Anesthesia. (La rachianesthésie générale.) T. Jonnesco.

October 11, No 31, pp 175-196

48 *Sea Air and Sunshine in Treatment of Tuberculosis in Children. Revillet and Debove.

43. **Detection of Simulated Deafness.**—Weiss calls attention to the discovery by Lombard of the fact that a totally deaf person does not raise his voice in speaking when a loud noise is made close to his ear, while a person with normal hearing does this unconsciously. He uses an electric apparatus which makes a loud noise close to the ear; with normal hearing the person being examined cannot help speaking louder, while the noise is in progress, and this is rendered evident by suddenly shutting off the current, stopping the noise.

45. **Scoliosis the Result of Inflammatory Tuberculosis.**—Poncet believes that infection of any kind has a tendency to invite abnormal curvature by its softening action on the bones, the weakening of the supports and its enfeebling action in general. It is thus the essential cause of scoliosis, and infection with tuberculosis is generally the one responsible. Monod in examining fifty-one children with scoliosis, found unmistakable signs of tuberculosis in 20 per cent.; others had tuberculosis in the family and in others the tuberculin tests gave positive findings, although there was nothing except the scoliosis to suggest tuberculosis. The same softening of bone tissue from an inflammatory tuberculous process is evidently responsible, Poncet says, for many cases of deformity of the bones in the young, such as painful flat-foot, genu valgum, incurved radius, coxa vara, etc., which have hitherto been classed as "tardy rachitis."

46. **Remote Results of Gastrectomy.**—Boeckel reports the ultimate outcome in seventy-six cases of cancer of the stomach during the last ten years. In twenty-one cases the growth was inoperable, and only in eleven cases was a radical operation undertaken. Of these eleven patients seven were completely cured by this means; in the four other cases the operation was attempted merely as a last resort without much hope of permanent success. In the cured patients nine-tenths of the stomach had been removed; the age of the patients ranged from 38 to 75. Direct anastomosis between the stomach and duodenum was possible in all but one of these cases. Two of this group of seven cured patients have succumbed since to an intercurrent affection. The others are in good health to date, the interval being over five years in one case.

47 **Jonnesco's Method of Anesthesia.**—Jonnesco's method of "general spinal anesthesia" has been fully described in these columns. He here replies to the criticisms it has received in Europe and America, and reiterates his declaration that his technic or its equivalent is destined to be the method of anesthesia of the future, its simplicity, benignity and general superiority over inhalation anesthesia being now established, he says, beyond question. He has applied the method in 1,005 cases, and it has been used by others in an additional 1,958. The age of the 2,963 patients ranged from 1 month to 82 years; 433 of the operations were on or above the thorax. He has not had a fatality, but two have been reported by other operators who used doses much larger than he recommends. Transient arrest of respiration occurred seven times in his experience, but five cases were in the early tentative period. The minor by-effects are growing less frequent and milder as the technic is being perfected. He replies in detail to Moorhead's criticism of the method in The Journal, Jan. 22, 1910, page 281, stating that none of the anticipated dangers has been realized in his experience.

48 **Sea Air and Sunshine in Treatment of Tuberculosis in Children.**—This report states that over 52 per cent. were cured of the 888 children with scrofulo-tuberculosis treated at a sanatorium near Cannes on the shore of the Mediterranean. The mildness of the climate and the constant sunshine are important factors in these results. Marked improvement was evident in the other children, so that positive results were obtained in over 93 per cent.

Presse Médicale, Paris

October 8, XVIII, No 81, pp 745-760

49 *Indications and Technic for Transscrotal Orchidopexy in Children. L Ombredanne.

October 15, No 83, pp 769-776

50 *Tuberculous Nephritis with Tendency to Edema. (La néphrite hydropigène tuberculeuse.) L Bernard.

October 19, No 84, pp 777-784

51 Radiotherapy in Acute Adenitis. F Jaugeas.

49. **Transscrotal Orchidopexy for Children.**—Ombredanne asserts that orchidopexy is indicated in every case in which the testicle can be felt in the inguinal region, but cannot be easily pushed down to the bottom of the scrotum, when the child is old enough to keep itself clean. He describes with seventeen illustrations his method of operating, which he says

is simple, practical, logical and rapidly executed; he has successfully applied it in twenty one cases of unilateral and in four of bilateral undescended testicle.

50. **Tuberculous Nephritis with Edema.**—Bernard regards the form of tuberculous inflammation of the kidney inducing dropsy as practically incurable, but improvement may be realized by general treatment for the tuberculosis. As the kidney permeability is not impaired and there is no uremic intoxication, there is no need for a milk diet or its equivalent. On the contrary, the patient's diet should be the strengthening and meat diet of the tuberculous, except that the dropsy has to be combated by restriction of salt, and eggs are better avoided. Energetic revulsion by repeated cupping should be applied to the kidney region with measures to promote diuresis in general. The onset of the affection is generally insidious; the patient first notices on waking in the morning that his eyelids or hands are a little swollen, but this soon subsides to recur again occasionally and finally to become permanent, and there may be hydrothorax or other accumulation of fluid in some serous cavity. The urine may be abundant or scanty, but it always contains considerable albumin with some tube casts and a few leukocytes and red corpuscles. The association of hematuria and dropsy suggests a tuberculous kidney affection, which is confirmed by the absence of symptoms on the part of the cardiovascular system and the increasing emaciation and anemia. The kidney affection may be primary or secondary, and it may prove fatal in from five to eight months, or may pass into a long chronic phase, especially in children; but the kidneys retain their permeability generally to the end, and the arterial tension persists low.

Revue de Chirurgie, Paris

October, XXX, No. 10, pp. 729-944

52 *Treatment of Arteriovenous Aneurysm. C. Monod and J. Vanverts.
53 *Operative Treatment of Compression of the Spinal Cord in Multiple Neurofibromatosis. (Intervention opératoire dans un cas de compression de la moelle cervicale au cours de la "maladie de Recklinghausen.") P. Guibal.
54 *Minor Traumatisms of the Skull. (Petits traumatismes du crane.) L. Imbert and G. Dugas.
55 Tearing Out of the Mesentery with Strangulated Hernia. J. Rabère and M. Charbonnel.

52. **Arteriovenous Aneurysms.**—Monod and Vanverts have compiled 161 cases that have been published in the literature since 1889, and summarize the details of the different groups according to the arteries involved. This was the femoral in eighty and the popliteal in thirty five cases. The general impression left by the survey is that much better results are obtainable, as a rule, from operating directly on the sac than from ligatures. The main drawback to a complete cure is the frequent coexistence of nervous lesions complicating the aneurysm and generally solely responsible for the postoperative disturbances. Only when direct action on the sac is impossible, they assert, should ligatures be given the preference. Removal of the sac offers the same advantages over incision for the arteriovenous as for the arterial aneurysms. The eleven cases of arteriovenous aneurysm of the common carotid show that ligature alone is not so ineffectual nor so dangerous as might be believed. All of the three patients treated by a four fold ligature were cured, as also in the four cases in which the sac was incised or removed.

53. **Operative Relief of Compression of the Spinal Cord in Multiple Neurofibromatosis.**—In Guibal's case symptoms developed in a woman of 40 with two grown children, suggesting compression of the spinal cord by a tumor, such as were observed in the arm, thigh, neck and elsewhere—typical neurofibromas. The total paraplegia and intense pains justified an attempt to remove the spinal tumor, although the nature of the affection warned that recurrence was more than likely. The tumor was readily exposed at the seventh cervical and first dorsal vertebræ and it shelled out with ease. The patient succumbed six days later, however, with symptoms indicating that an accumulation of blood and serum at the site of the tumor was injuring still further the flattened spinal cord, the effects being like those of total transverse section of the cord. If the operation had been done when first advised, a year or so before, the results might have been better. The woman's husband had been infected with syphilis ten years before, but the woman showed no traces of this infection.

54. **Minor Traumatisms of the Skull.**—Imbert and Dugas discuss the accidents affecting the skull which do not seem of much importance at first, but entail serious consequences later, as, for instance, in a case they report in which a child was struck on the head with a ruler, this slight injury finally entailing idiocy. The idea of operative interference seems almost absurd for these slight injuries, but the physician should not be misled, they declare, by the apparent insignificance of the symptoms which may mask serious anatomic lesions. Imbert and Dugas do not advise trephining at once in every case of traumatism affecting the skull, but they do urge careful search for minor signs revealing the seriousness of the injury, such as changes in the cerebrospinal fluid and arterial tension, lowering of the temperature, venous congestion in the face, headache, vertigo, disturbances in pulse or respiration, or both, buzzing in the ears, drowsiness and changes in the fundus of the eye and in the ear. An apparently slight injury may be followed by a hematoma, which may do serious harm unless promptly evacuated, or the slight injury may become complicated with infection or mental disturbances later. Unless there is fracture they do not advise operative interference unless functional localization of the injury is possible. The seat of the fracture may be indicated by a hematoma or blood in the ear or vicinity, but when this is lacking an exploratory incision of the skin may reveal the seat of the trouble. If the bone is intact this does no harm, while if the bone shows signs of injury the proper point for trephining is thus located.

Semaine Médicale, Paris

October 19, XXX, No. 42, pp. 493-504

56 *Practical Results of Percussion Palpation in Examination of the Heart. (Des résultats pratiques de l'examen du cœur d'après la méthode d'Orsi Grocco.) C. Frugoni.

56. **Percussion-Palpation of the Heart.**—Frugoni states that the method of touch palpation for determining the outlines of the heart has been in use in Italy for thirty years, Orsi and Grocco having introduced and perfected the technic. He extols its extreme simplicity and the value of the information thus derived. It aims to determine the oblique and the transverse diameters of the heart. The finger applied to the chest should be pressed down firmly to reduce the vibrations of the wall. The lower end of the oblique diameter, the apex, is located by inspection, palpation and light, radiating percussion, while the upper end is determined by *moderately strong percussion* along the left margin of the sternum, it is generally just above the third costal cartilage, the total diameter averaging from 8.5 to 9 cm. in adults. This oblique diameter determines the size and direction of the left ventricle, showing any displacement or enlargement. The transverse diameter is determined by palpation starting at the fourth rib or interspace, at the junction of the left third and right two thirds of the sternum, the line being carried to 1 cm. from the mammillary line. This diameter averages 7.5 or 8 cm. in the adult. The location of the right end of the transverse diameter is a faithful barometer, he says, of the contractile power of the right ventricle, and is thus extremely important for the prognosis in acute pulmonary disease and in all cases in which there is reason to fear degeneration or enfeeblement of the myocardium. When exophthalmic goiter is suspected, Grocco determines the transverse diameter on the patient at rest but standing, and then has him take some vigorous exercise, such as running, climbing the stairs, etc. The transverse diameter is then determined anew, and if a displacement of 1, 2 or 3 cm. toward the right is discovered, it is evident that there is acute dilatation of the right ventricle, as can be verified by the Roentgen rays. This readiness of the right heart to dilate after an effort is an early and almost constant symptom of exophthalmic goiter, he states, and the intensity of the phenomenon throws light also on the prognosis of the disease. Tachycardia is an entirely independent phenomenon, due to nervous influences, while the ready dilatability of the heart is a sign of muscular weakness. Another sign revealed by the percussion palpation is a band of dulness along the third left costal

cartilage in case of dilatation or hypertrophy or both of the left auricle, revealing a mitral lesion, especially mitral stenosis. Normally this horizontal band of dulness is about 1 cm. wide; the increase in width with enlargement of the left auricle has great diagnostic value in the course of acute pulmonary affections and symptomless valvular disease. Another sign brought out by percussion palpation is what he calls the pericardium hood (*capuchon péricardique*). An area of dulness fits over the base of the heart like a hood, and the clinical and post-mortem findings show that this is the sign of a special form of pericarditis at the base, with hyperplasia, in connection with the large vessels and the reflection to the aorta of the serous pericardium. This area of dulness thus fitting over the base of the heart indicates a fixed morbid process in the pericardium. When it appears in acute articular rheumatism it indicates that the heart is particularly vulnerable. It has also been found in some cases of chorea and in puerperal infection and in other diseases liable to be accompanied by the ordinary forms of pericarditis. The discovery of this area of dulness has sometimes explained otherwise mysterious fever or dyspnea. The bruits are of greater diagnostic importance than the palpation findings with disease of the aorta, he continues, and explains the reasons in detail.

Archiv fur klinische Chirurgie, Berlin

XCIII, No. 2, pp. 293-556. Last indexed, Oct. 22, p. 1507

57 Treatment of the Non-Traumatic Form of Epilepsy. F. Krause
58 Surgery of the Esophagus. W. Wendel
59 Operative Treatment of Otogenous Meningitis. H. Mygind
60 Influence of Metabolic Disturbances and Intoxication on Healing of Wounds and Growth of Tumors. (Beeinflussung der Wundheilung und des Geschwulstwachsthums durch Stoffwechselstorungen und Vergiftungen.) G. Schone
61 Fallopian Tubes and Ovaries in Inguinal Hernia. O. Fischer
62 Suture of Bones. K. Ludloff.
63 Treatment of Callous Gastric Ulcer. H. Küttner.
64 Operative Treatment of Acute Hemorrhagic Pancreatitis. E. Bircher
65 Pathogenesis, Pathologic Anatomy and Radical Operative Treatment of Round Gastric Ulcer. (Runder Magengeschwur.) E. Payr
66 Explanation of Effect of Bullets on Skull. (Kronlein'sche Schadelschusse.) C. Franz
67 Injuries of the Liver and Isolated Omentoplastics. (Leber [illegible] oljarski
68 [illegible] Cicatricial Stenosis of the Rectum. S. P. v. Fedorow
69 Operative Cure of Snapping Hip Joint. (Zur Anatomie und Aetiologie der schnellenden Hüfte.) W. Kohn.

68. **Treatment of Low Stenosis of the Rectum without Resection.**—Fedorow avoids the usual circular resection of a low cicatricial stricture in the rectum by drawing down the colon to form a new anus. He first mobilizes the pelvic colon through an opening in the sacrum. His technic is illustrated as he worked it out on the cadaver. It is simple and takes comparatively little time, and is a much less serious operation, he thinks, than resection of the rectum.

Beitrage zur klinischen Chirurgie, Tubingen

September, LXIX, No. 3, pp. 547-841

70 Conditions in Inguinal Region in Respect to Varicocele. (Einfluss der Leiste auf die Varicocele.) E. Schwarz
71 Lipoma of Seminal Cord. (Lipome des Samenstrangs.) N. Beresnegowsky
72 Retroperitoneal Lipoma. H. v. Vegesack
73 Successful Suture of Heart. (Zur Kasuistik der Herzchirurgie.) A. Fischer.
74 Idem. F. Magenau
75 Resection of Chest Wall. (Brustwandresektionen.) B. Werner
76 Meckel's Diverticulum in an Incarcerated Interparietal Hernia. F. Pabst
77 Experimental Research on Etiology of Tumors. S. Lowenstein.
78 Rigidity of Abdominal Walls. (Ursachen, Zustandekommen und klinischer Wert der Bauchdeckenspannung.) A. Hoffmann
79 Primary Carcinoma of Vater's Papilla. J. Oehler
80 Plastic Operations on the Dura. G. v. Saar
81 Benign Epithelial Tumors of the Skin, etc. (Gutartige epitheliale Geschwulste der Haut und verwandter Gebilde.) H. Burckhardt
82 Intravenous Ether Anesthesia in 40 Cases; Local Thrombus in All. H. Schmitz-Peiffer

Berliner klinische Wochenschrift

October 10, XLVII, No. 41, pp. 1861-1916

83 Development of Medical Instruction at University of Berlin. Centennial Sketches by Twenty-four of the Professors. (Entwicklung des medizinischen Unterrichts an der Universitat Berlin).

Correspondenz-Blatt für Schweizer Aerzte, Basel

October 10, XL, No. 29, pp. 913-944

84 Tubercle Bacilli in Calcified Foci. (Tuberkelbazillengehalt verkalkter Herde.) C. Wegelin.

October 20, No. 30, pp. 947-1024

85 *Dangerous Intraperitoneal Hemorrhages with Uterine Myomas. F. Brunner.
86 Nature and Importance of the Diastole. M. Cloetta.
87 *Alcoholic Neuritis in Children. H. Eichhorst
88 *Causal Treatment of Eye Disturbances. O. Haab
89 *The New Tasks and the New Methods for the Organized Profession. (Aerztliche Kollektivaufgaben der Zukunft.) H. Haberlin.
90 *Hyperemia in General Practice. (Die Bier'sche Stauung des praktischen Arztes.) J. Michalski
91 Importance of the Interstices in the Bone Marrow for General Disease of the Growing Skeleton. (Bedeutung der Knochenmarkkanale für die Systemerkrankungen des wachsenden Skeletts.) M. B. Schmidt.
92 The School and Curvature of the Spine. (Schule and Rückgratsverkrümmung.) W. Schulthess
93 Importance of the Pathogenic Micro-Organisms. W. Silberschmidt.
94 *Allowing Parturients to Get Up Early. (Frühaufstehen der Wochnerinnen.) T. Wyder
95 *Industrial and Accidental Poisonings. (Vergiftungsfalle.) H. Zangger.

85. **Profuse Intraperitoneal Hemorrhages with Uterine Myomas.**—Brunner has been able to find only twelve other cases on record of this occurrence besides the one he reports, but he insists on the necessity for bearing this possibility in mind as prompt operative aid is the only means of relief. It is possible that this may sometimes have been responsible for fatalities ascribed to other causes. The symptoms are the same as with any sudden hemorrhage into the peritoneum; the knowledge of the existence of a fibroma should draw attention to this possible source for the hemorrhage; it is generally ascribed to tubal pregnancy or gastric ulcer. The correct diagnosis was made only in Brunner's case and in this not until nearly an hour had elapsed after the onset of the hemorrhage although the existence of a large fibroid tumor had long been known, the patient, aged 42, being a nurse in the hospital. Two and a half liters of fluid blood were removed from the abdominal cavity; the surface of the fibroid was a network of veins.

87. **Alcoholic Neuritis in Children.**—Eichhorst reports that he has encountered sixty-seven cases of alcohol neuritis at Zurich since 1884, all in patients over 20 except one boy of 8 who had complained for two years of pains in the lumbar region and increasing weakness in the muscles of the legs and back. The child was demonstrated before a class as an example of progressive pseudohypertrophy of the muscles with little hope of recovery, but the discovery that the boy stole out of his bed at night to drink the alcohol in the lamps, etc., cleared up the diagnosis, and under baths, massage and potassium iodid he was restored to health in a few months and he has since developed normally. The knee-jerk remained lively and there were no spontaneous pains or tenderness or paresthesias. The accumulation of fat in the paralyzed muscles was particularly evident in the calves and parts of the skin. The legs and lumbar muscles were the ones mainly affected, although there was some fibrillary twitching in the muscles of the arms. His father was a hard drinker.

88. **Causal Treatment of Eye Disease.**—Haab comments on the fact that the eye is practically part of the skin and thus shares the tendency of the skin to certain diseases, such as herpes, eczema, acne, variola and pemphigus, all of which may develop in the eye while other diseases may send their toxins to the eye. The more constitutional the origin of the morbid process in the eye the greater the tendency to involvement of both eyes. The Wassermann reaction and the newer tuberculin tests have rendered great service in differentiating the true cause in certain cases of eye disease and preventing mistaken treatment; potassium iodid, for example, he says, may do great harm by its weakening effect when an eye process is of tuberculous origin although its aspect may be more that of a syphilitic lesion, and specific treatment is contraindicated and tuberculin and general measures required when the trouble is tuberculous. With scrofulous eye affections systematic institutional treatment is indispensable, he affirms.

89 **The Tasks Now Before the Organized Profession.**—This issue of the *Correspondenz-Blatt* is a *Festnummer* on the occasion of the centennial of the medical society of the Zurich province, and Haberlin reviews the "collective tasks" now before the society. The trend of the times is toward organization, and this is especially incumbent on the medical profession in Europe on account of the extensive introduction of compulsory insurance of wage earners against sickness. In the past it has been sufficient for physicians to refrain from injuring their colleagues in any way, but this negative ethical platform is no longer broad enough, positive concerted action to protect one and all against exploitation by outsiders has now become a necessity. Conditions within the profession are also altering so that it is no longer wise to ignore the small proportion of members of the profession who cast discredit on it by their unethical conduct, the profession must take more active measures against such men in the interests of the profession itself. Responsibility to the profession is constantly growing and developing and likewise responsibility in numerous control services, in pioneer work in many lines and fields for unremunerative, self sacrificing services in various honorary positions. The development of wage earners' insurance relieves the physicians of much of their unpaid work among the poor, thus giving them time for taking a leading part in the new and wide fields of effort in various lines.

90 **Hyperemia in General Practice.**—Michalski emphasizes the value of suction and constriction hyperemia in treatment of many affections in every day practice, and he extols the simplicity and harmlessness of the technic. The cupping bells are the easiest to apply of the two methods, and five minutes' suction treatment daily may have a remarkable curative action. He has a water jet vacuum pump for regulating the suction but the rubber bulb is almost as effectual. Boils and carbuncles are the most grateful field for this method of treatment. When seen early, before they are "ripe," the suction glass alone will sometimes cure them completely in two or three days. Later, it is preceded by a small incision under ethyl chlorid, the contents are sucked out by the cupping bell without pain and healing proceeds much more rapidly than by other technics. The suction hyperemia is also effectual in mastitis, and for pains in the scar after a laparotomy, but he warns against allowing the patient to use the cupping bell without supervision. The hyperemia induced by the elastic constricting band is particularly useful, he declares, for acute joint affections, especially gonorrheal, and for felons, after an incision to permit aspiration of pus. In surgical tuberculosis the constriction should be a little tighter than with other affections and great perseverance is needed, Bier regards nine months as the average length for the course of treatment, but it may cure without mutilating operations being necessary and this is worth striving for. Cold abscesses must be sought for and the contents aspirated early. The curette is rendered superfluous, he states, by hyperemic treatment either by suction or constriction, but heart disease, diabetes and arteriosclerosis are generally accepted as contraindications for it.

94 **Allowing Parturients to Get Up Early.**—Wyder takes the practical ground that it is wisest to keep patients in bed for a time after childbirth as otherwise the laity will get the impression that women do not need to be treated as invalids after delivery. Household tasks will be resumed and the women will fail to get the needed rest and freedom from ordinary work and cares. Institutions should strive to keep the women as long as possible from their ordinary work, and this, he asserts, is the essential point, not the question as to whether they should be allowed to get up a day or so earlier.

95 **Industrial Poisonings.**—Since 1898 Zangger has been studying industrial poisoning in various industries in different countries, especially the nature of the chemicals used in certain industrial processes, and he here reviews his clinical experience at Zurich last year. The neurologic symptoms are often the first that attract the patient's attention and the true diagnosis is often rendered difficult by the similarity between the effects of certain chronic intoxications and infectious diseases, and by the great variability in the reaction of different individuals to the same poison, and by the difficulty in discovering the poison involved as it is frequently used in the industry under a fancy name or only for a certain brief period. Lead he has found used in 150 different industries, and many girls work with it without knowing that they have anything to do with lead, as in making or packing stiffened tissues, laces, fringes, bottle stoppers, paints for china, papers, varnishes, cements, and repairs for parts of electric apparatus. Carbon monoxid poisoning from portable steam engines occurred in several workers in tunnels, and in others from salamanders used in drying new plaster. The escape of water gas into a factory room caused severe headache and vomiting with speedy recovery in some of the workmen but in others weakness in the legs developed, with total amnesia, the syndrome not subsiding for weeks. He has encountered forty-five cases of severe carbon monoxid poisoning in which the patients survived, the majority presented tardy symptoms. Anilin and nitrobenzol he found used in the manufacture of washing powders, hair oil, shoe blacking and various essential oils. These substances are particularly dangerous here as they are used under fancy and various names, as perfumes and essences, so that no one suspects their poisonous nature. In two cases death was directly traceable to the nitrobenzol used in making a washing powder or shoe blacking, and in a third case a child had bloody urine the day after some shoe dressing had been applied to the bare feet. The less saturated the substance the greater the tendency to chronic disturbances, both local and general, benzin, for instance, has a lesser toxic action than benzol and the toxic action increases in allyl alcohol, acrolein, etc. This explains why the acute intoxications often display peculiar features, due more to the special physical properties of the chemical, the chronic intoxications are more the result of the chemical properties than of the physical. The majority of industrial poisonous substances, he remarks in conclusion, are fatal only with relatively large doses but they induce special and often typical syndromes, particularly on the part of the nervous system, when the system is long subjected to their influence.

Deutsche medizinische Wochenschrift, Berlin

October 13, XXXVI, No. 41, pp. 1889-1936

96 *Ehrlich's '606' in Syphilis. A. Neisser, P. Ehrlich, K. Alt, E. Schreiber, J. Iversen, W. Wechselmann, J. Orth, P. Uhlenhuth, C. Stern, L. Michaelis, K. Grouven and twenty-one others.

October 20, No. 42, pp. 1937-1984

97 Rudolf Virchow and Bacteriology. J. Orth.
98 Functional Diagnosis of the Heart. F. Kraus.
99 Etiology of Trachoma. (Natur des Trachomerregers.) H. Herzog.
100 Quartan Malaria in Germany. P. Muhlens.
101 Unusual Localization of the Blue Line in Chronic Lead Poisoning. H. Kniernm.
102 *Transient Amaurosis. L. Pollnow.
103 Movable and Wandering Cecum. T. Hausmann.
104 *Muscular Rigidity as Sign of Tuberculous Apical Disease. F. M. Pottenger.

96 **Ehrlich's "606" in Syphilis.**—The substance of this symposium was given in THE JOURNAL, November 5, page 1656.

102 **Transient Blindness.**—Pollnow reports a case of transient blindness after vaccination, evidently the result of a special neuroretinitis, vision gradually becoming restored in the course of a few months. In two other cases the transient amaurosis followed scarlet fever. In all the cases the eye affection did not develop until several weeks after the apparently causal affection, and it was transient in all. In the scarlet fever patients, two brothers, the fundus showed merely retrobulbar neuritis, while in the vaccination case there was choked disc in both eyes.

104 **Rigidity of the Chest Muscles as Early Sign of Tuberculous Apical Disease.**—The experiences in America and Europe seem to have confirmed the importance of Pottenger's sign of rigidity of the muscles of the chest as an early indication of disease in the apex. He here replies to some criticisms and theorizes to explain the mechanism of the sign. It is liable to be encountered, he says, with any incipient inflammatory affection of the lung or pleura, becoming apparent at the slightest inflammatory reaction within.

Deutsche Zeitschrift für Chirurgie, Leipsic

September, CVI, Nos. 4-6, pp. 307-620

105 Forty-Eight Cases of Intestinal Stenosis from Secondary Carcinoma. W. Dann.
106 Resection of Lumbar Vertebræ. W. Kausch.
107 Diagnosis of Appendicitis. P. Esau.
108 Operative Displacement of the Thyroid; Six Cases. (Technik und Indikationen der Endothyreopexie.) E. Tavel.
109 Bilateral Inguinal Hernia of the Double Uterus. M. Makkas.
110 Movable Cecum as Cause of So-Called Chronic Appendicitis, and Advantages of Cecopexy; Fifty-Two Cases. E. Stierlin.
111 *Cosmetic Removal of Tuberculous Glands in the Neck. H. Krüger.
112 Advantages of Suture of Vessels Through Entire Wall. (Wert der einfachen, fortlaufenden, die ganze Gefässwand durchfassenden Gefässnaht.) K. v. Schiller and L. Lobstein.
113 Surgery of Biliary Apparatus; 120 Operations in 1909. W. Eichmeyer.
114 Endothelioma on Dermoid Nevus. F. Lafaro.
115 Decompressive Craniectomy. A. Jianu.
116 Hernia Involving Colon, Ileum and Cecum. A. Jianu.
117 *Case of Symmetrical Neurotic Gangrene After Spinal Anesthesia. P. Sudeck.

111. **Cosmetic Operations for Tuberculous Glands in the Neck.**—Krüger comments on the disfigurements frequently resulting from removal of enlarged glands in the neck, and then describes a non-disfiguring technic which he has successfully applied in forty cases. The incision is nearly hidden by the hair or collar, while it permits ample access to the diseased tissue. It starts at the edge of the hair on the level with and close to the mastoid process, follows the edge of the hair nearly to the back, then runs vertically down to the anterior margin of the trapezius muscle and curves with this to the clavicle and runs along above this to the sternocleidomastoid or beyond. Only a slight stretch of the vertical portion is visible, while the large flap that can thus be turned back exposes the glands fully to view.

117. **Symmetrical Gangrene After Spinal Anesthesia.**—Sudeck states that a woman of 62 developed symmetrical gangrene in the dorsum of the feet and part of the toes. The anesthesia had been applied for an operation for incarcerated hernia, and the redness and blistering were observed the morning after the operation. Goldman has reported a somewhat similar case in which the symmetrical gangrene affected the heels.

Medizinische Klinik, Berlin

October 16, VI, No. 42, pp. 1643-1682

118 Stimulating Influence on Metabolism of Radium Emanations. (Radium und Stoffwechsel.) F. Gudzent.
119 The Light of the Spectrum in Examination of the Eye. (Verwendung von Spektrallicht zur Augenuntersuchung.) R. Helmbold.
120 *Practical Points in Diagnosis of Acute Otitis Media. S. Blum.
121 Operative Removal of False Teeth from the Esophagus. (Zwei Fälle von verschlucktem Gebiss.) H. H. Dreesmann.
122 Ehrlich's "606" in Syphilis. O. Salomon.
123 *Action of Ehrlich's "606" in Syphilis. E. Meirowsky.
124 Somnambulism as Epileptic Equivalent. F. Kanngiesser.
125 *Potassium Permanganate or Urochromogen Urine Test and Its Relation to the Diazo Reaction. (Neue Harnreaktion.) M. Weiss.

120. **Symptom of Acute Otitis Media.**—Blum reports that further experiences with 200 cases have confirmed his statements in regard to the early diagnosis of otitis media in children by local pressure. The Journal described the sign as follows, Nov. 30, 1907, page 1874: On placing the finger behind the angle of the jaw in the groove formed by the inferior maxillary bone and the anterior border of the sternomastoid of the affected side, and pressing upward and inward toward the auditory canal, decided evidence of pain is elicited. He says this symptom is constant in otitis media, and is of special diagnostic value in infants.

123. **Ehrlich's "606" in Syphilis.**—Meirowsky states that the "606" does not seem to have any irritating action on the kidneys. He observed rapidly transient albuminuria in only one of his eighty cases but in not less than six cases necrosis developed at the point of injection, painless for weeks until is opened outward; there was no suppuration.

125. **Urochromogen Reaction in the Urine.**—Weiss dilutes 1 part of fresh urine with 2 parts water and fills half of two test-tubes with the mixture. He then adds to one of the test-tubes 3 drops of a 1 to 1,000 solution of potassium permanganate in distilled water. In the presence of urochromogen, a yellowish tint develops, the intensity proportional to the diazo reaction.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXII, No. 1, pp. 1-172. Last indexed, Sept. 3, p. 897

126 *The Blood-Pressure During Narcosis plus Chilling. (Verhalten des Blutdruckes unter der Einwirkung von Temperaturreizen in Aether und Chloroformnarkose und seine Bedeutung für die Entstehung der Nachkrankheiten.) H. Stursberg.
127 Little if any Prophylactic Efficacy in Subcutaneous Injection of Nucleinic Acid before Laparotomies. E. v. Graff.
128 Pathogenesis of Appendicitis. (Zur Klärung der Pathogenese der Wurmfortsatzentzündung auf Grund experimenteller und bakteriologischer Untersuchungen.) B. Heile.
129 *Serotherapy in Hemophilia. E. Trembur.
130 Slight Functional Consequences of Operative Removal of the Musculature of the Large Intestine and Rectum. A. Müller and O. Hesky.
131 The Iron Metabolism in Leukemia and After Splenectomy and the Influence of Roentgen-Ray Treatment. (Eisenstoffwechsel im Falle von myeloischer Leukämie und Splenektomie.) R. Bayer.
132 Actinomycosis of the Liver. L. Diehl.
133 *Prognosis of Extensive Resection of the Small Intestine. W. Denk.
134 Case of Biliary Peritonitis without Perforation of Biliary Apparatus. P. Clairmont and H. v. Haberer.
135 Anuria after Gall-Stone Operations. P. Clairmont and H. v. Haberer.

126. **Blood-Pressure During Narcosis Plus Chilling.**—Stursberg reports experimental research on dogs which showed that under the influence of ether the application of cold caused a pronounced rise in the blood-pressure. When the dogs were under the influence of chloroform, there was no effect of this kind on the blood-pressure. These facts show that ether, in the dose necessary for general anesthesia, does not affect the vasomotor reflexes, while, on the other hand, chloroform evidently arrests this reflex action. In discussing the practical importance of these findings he compares the effect of ether in these experiments to that of "catching cold." Although the nature of "catching cold" is not fully understood, yet it is generally assumed that it is the result of the contraction of the vessels in the skin with consequent increased accumulation of the blood in the internal organs; in other words, it is the peripheral vascular reflexes which play the decisive part in the development of the "catching cold syndrome." Contraction of the vessels unless followed at once by a reaction of dilatation seems to be especially dangerous. The conditions are thus seen to be practically the same under the action of ether as from "catching cold:" the vessels contract under the influence of cold without the salutary reactive dilatation. This explanation harmonizes with the facts observed, namely, that the use of ether is followed by postoperative pneumonia, etc., much more frequently than when chloroform is used. The practical lesson from this research is that when ether is used great care should be taken to avoid cooling the skin at any point. He adds that this harmonizes with the conclusions of S. G. Davis, which he reached by another route, to the effect that postoperative pulmonary complications may be avoided by preventing any reduction of body temperature.

129. **Serotherapy in Hemophilia.**—Trembur describes the history of a girl with extreme hemophilia who was treated by rabbit serum. The child increased 17 pounds in five months and it was hoped that she would outgrow the tendency, but the onset of menstruation brought excessive losses of blood and although injection of 20 c.c. of rabbit serum had a strikingly favorable transient effect, the child succumbed to anemia. In a second case of hemophilia, in a boy of 9, the profuse hemorrhages were arrested at once by injection of 42 c.c. of fresh rabbit serum in two weeks. In both cases there was intense fetor ex ore for a few days before the onset of the hemorrhages. No by-effects were observed in either case; the favorable action of the serum is probably due to the leukocytosis which it induces. He warns, however, that the kind of serum used should be changed at the slightest indication of anaphylaxis.

133. **Prognosis of Extensive Resection of Small Intestine.**—Denk reports the ultimate outcome in fourteen cases in which over 3 and 4 meters (yards) of small intestine were resected, including one case from his own experience. All the patients who had not over one-half the total length of the small intestine resected, 3 meters, are in good health to date, from six to fourteen years afterward, but those with more extensive resection than this have all died with progressive marasmus.

Monatsschrift fur Geburtshulfe und Gynäkologie, Berlin

October, XXXII, No 4, pp 385-516

- 136 Instruction in Obstetrics and Gynecology at Berlin Medical School, 1810 1910 A. Martin
- 137 Combined Malformations in Kidneys and Uterus (Zur Genese kombinierter Nieren-Uterus Missbildungen.) E Holzbach
- 138 *Tetany during Pregnancy (Tetania graviditarum) D Frank.
- 139 *Ovarian Origin of Uterine Hemorrhage Kaji
- 140 Indications in regard to the Other Tube with Tubal Pregnancy (Wie ist bei der Operation einer Tubargravidität die Tube der anderen Seite zu behandeln?) M. Rosenstein.
- 141 Suppurative Catarrh in the Fallopian Tube after Induced Abortion. K Ameisbach.
- 142 *Connection between Myoma and Internal Disease (Zusammenhang von Myomen mit internen Erkrankungen) A Theilhaber
- 143 Normal Standards for Size of Uterus (Plastische Modelle zur Grossenbestimmung von Unterleibstumoren insb der schwangeren Gebarmutter) R Schaeffer.
- 144 Treatment of Postpartum Hemorrhage R Hofstatter.

138. **Tetany During Pregnancy.**—Frank has found it necessary to interrupt the pregnancy in several cases of tetany developing during pregnancy and advocates this procedure in the severer cases, especially when there is a tendency for the tetany to recur with different pregnancies. In most cases the tetany can be conquered with the bromids but it is not always possible to determine positively the inherently mild cases. *In four cases on record and in one of his own the tetany* was the direct cause of death.

139. **Ovarian Origin of Uterine Hemorrhage.**—Kaji states that in seven cases no cause for the hemorrhage could be discovered in or around the uterus, but in every instance, one or both ovaries were found pathologic. He is convinced that uterine hemorrhage may be due to influences from the ovaries in certain cases.

142 **Connection Between Myoma and Internal Disease**—Theilhaber reports seventeen cases in which uterine myomas coexisted with heart disease, contracted kidney or diabetes. The heart trouble was generally a myocarditis, and most of the patients were obese. He comments on the frequency of myoma in wealthy women, especially in Jewesses. The facts observed suggest that some metabolic disturbance with pronounced hyperemia of the uterus are the main factors in the development of myoma. There also seems to be a racial predisposition, and syphilis is certainly a predisposing cause He warns that a gumma in the uterus may simulate a myoma, while it might subside under mercurial treatment. It might be wise to apply the Wassermann test, he adds, to patients with myoma and inaugurate a course of antisyphilitic treatment in case of a positive response In conclusion he cites several cases in which there was slight cerebral hemorrhage with uterine myoma; Czerny has encountered five cases of paralysis with myoma.

Münchener medizinische Wochenschrift ,

October 11, LVII, No 41, pp 2121-2168

- 145 *The Importance of Abnormal Lime Metabolism in Origin of Kalkstoffwechselstorungen fur W Dibbelt
- 146 * ing Delivery (Tentoriumzerreissungen bei der Geburt) R Beneke
- 147 *Stretching of the Dura in Relation to Chronic Brain Disease (Bedeutung der Duraspannung fur chronische Gehirnerkrankungen) R Beneke
- 148 *Mechanism of the Delivery of the Skull and Protection of the Perineum (Mechanik des Austrittes des kindlichen Schadels und Dammschutz) H C A Grube
- 149 Technic for the Meiostagmin Reaction in Cancer. M. Ascoli
- 150 Serodiagnosis of Syphilis, Frambesia and Malaria in Sumatra. (Die Wassermann Neisser Bruckschc Reaktion in den Tropen) G Baermann and N Wetter
- 151 Simplification of the Wassermann Reaction. L Kepinow.
- 152 Outcome of Treatment of Gynecologic Nervous Disturbances E Engelhorn
- 153 *Puncture in Treatment of Gonorrheal Epididymitis R. Fruhwald
- 154 Behavior of Ehrlich's "606" in the Rabbit Body. Schwartz and Flemming
- 156 Ehrlich's "606" in Leprosy E Ehlers
- 157 Centennial of the Berlin Medical Faculty. K Sudhoff.

145. **Lime Metabolism and Rachitis.**—Dibbelt reports research which, he thinks, explains the origin of rachitis as a disturbance in the lime metabolism leading to increased excretion of the lime salts into the intestine. The rachitic bone changes are the consequence of this general metabolic disturbance, as he explains in detail.

146-147. **Pathologic Importance of Stretching the Dura.**—Beneke explains the mechanism with which any pressure on the sides of the head of an infant may stretch the dura so forcibly as to entail venous stasis in the ventricle region. During delivery, pressure of this kind may tear the tentorium in a characteristic manner and this, he believes, if it is not immediately fatal, explains certain brain affections in later life. Pressure on the temples of the head from a child cadaver closes the foramen magnum by forcing part of the cerebellum into it. The condition is seen to be the same as with chronic hydrocephalus in which the cerebellum is forced into the foramen and the communication with the spinal canal is obstructed He found the tentorium lacerated thus in a number of children dying during delivery or soon after, even when the delivery had been rapid and easy, once even with a four months' fetus. The possibility that fatal asphyxia may be due to this cause with normal delivery is important, from both the clinical and medicolegal standpoints. Pressure on the temples of the decapitated head from a child cadaver is seen to stretch the falx as well as the tentorium, and thus it entails compression of the straight sinus which must induce venous congestion in the region of the tela and choroid plexus The same thing occurs when a child with still open sutures lies habitually on the side of its head; the weight of the brain alone has this effect of stretching the falx with the consequent tendency to venous congestion inviting hydrocephalus. Acute total occlusion of Galen's vein is liable to entail sudden death, as occurred in the case of a young man in Beneke's experience Rachitis or softening of the bones of the skull in older children may also favor the stretching of the falx and tentorium as the child lies on the side of its head and this may be the explanation in many cases of chronic hydrocephalus, as the straight sinus and the longitudinal sinus are both liable to compression from this cause, with chronic hyperemia in the region as the result. It is a familiar fact that in children with rachitis the brain is unusually heavy, evidently the result of a special hyperemia; this hyperemia is now explainable, he declares, as the result of the lengthwise stretching of the dura by pressure on the side of the head.

148 **Prevention of Laceration of the Perineum.**—Grube comments on the necessity for preventing the parturient from slipping away from the hand protecting the perineum during delivery. This he accomplishes by having her lie on her back, the shoulders being held by another person; a small cushion is slipped under the buttocks close to the anus, the feet are supported or the thighs are flexed on the abdomen. The obstetrician's right hand should be protected by a coarse cotton mitten. The diameter of the fetal head from brow to back of the neck is brought into the median line, the right hand pushing back the perineum with the thumb while holding the forehead firm with the rest of the hand. The left index and middle fingers, at the same time, are worked into the angle toward the symphysis, and lift up the back of the head until the back of the neck enters the symphysis angle. With this technic he has successfully delivered fifty-two primiparæ including five over thirty years old, there was laceration of the perineum in only four cases, and in one of these the laceration occurred during the passage of the unusually broad shoulders, the head having emerged without injury. The few lacerations that did occur were all small, of the first degree, and were readily sutured at once

153. **Puncture in Treatment of Gonorrheal Epididymitis.**—*Fruhwald* gives comparative series of patients with gonorrheal epididymitis treated with puncture and without, the results demonstrating, he declares, that the immediate effect of the puncture is often a great relief, but that it has no durable curative action. The indications for it are consequently limited.

Therapie der Gegenwart, Berlin

October, LI, No. 10, pp 433-480

- 158 *Duodenal Ulcer. (Zur Pathologie und Therapie des Duodenalgeschwurs) F Umber
- 159 *Treatment of Acute Infectious Diseases in Children. A. Baginsky
- 160 *Treatment of Asthma. O Weiss.

158. Duodenal Ulcer.—Umber remarks that duodenal ulcer must be more frequent than is generally recognized as in none of his cases had the diagnosis been correct when the patients were referred to him; at one time he had five cases at once in his service. At the same time he expresses some skepticism in regard to the Mayo's report of more duodenal than gastric ulcers in a recent series of 200 cases. The wall of the duodenum may be apparently intact when examined from without, and the symptoms often lead to false conclusions. The pains frequently simulate gall-stone trouble; one of his patients found relief by assuming the knee-elbow position during the attack. In this case the ulcer was in the rear wall of the duodenum and had become adherent to the pancreas. The pain seems to be dependent more on the quantity than the quality of the food. The stomach is generally functionally affected in sympathy. Treatment should be practically the same as for gastric ulcer unless profuse hemorrhages or unbearable pain demand operative interference. In one of his cases gastro-enterostomy alone did not prove sufficient to arrest the tendency to hemorrhage.

159. Treatment of Acute Infectious Diseases in Children.—Baginsky classifies the febrile cases in children in four categories: (1) those with a temperature between 40.5 and 41 C. (104 and 105.8 F.), but not of long duration; this is borne by children without much harm for a comparatively short time; (2) those in which the temperature fluctuates between 40 or 41 C. and 36 C. (104, 105.8 and 96.8 F.); this is the expression of septic infection and can seldom be influenced by antipyretic measure but only by removal of the septic focus; (3) cases with prolonged high temperature without much let-up, from 39 to 41 C. (102.2 to 105.8). This is especially dangerous for children. The fever is the expression of severe infection and, besides, exhausts the child's strength. If the fever keeps up for 5, 6, 8 or more days, it should be vigorously combated; the extent of surface on the child body ensures particularly favorable action with hydrotherapeutic measures for reducing the temperature; drugs should be avoided unless absolutely necessary. All antipyretic measures should be accompanied by tonics, and he regards wine as the best of these, and absolutely indispensable in infectious diseases in children, as it keeps their strength up owing to its complex composition, not solely by the alcohol content. He aims to keep the child's strength up during the febrile period with wine, milk, bouillon and raw eggs, believing that heart weakness in children is often the result of insufficient nourishment during the height of the disease. He prefers Greek wine or Bordeaux and sherry, giving from 25 to 100 gm. (½ to 3 ounces) daily to children from 5 to 14 years old. Even very sick children can be fed in this way and their strength and weight maintained so that they enter on a more favorable and shorter convalescence. Catarrhal conditions in the air passages and digestive tract and pathologic conditions of the kidneys are aggravated by defective functioning on the part of the heart, so that measures to keep the heart toned up act favorably on these other organs. Unless there is actual nephritis, elimination of toxins through the kidneys is promoted by subcutaneous injection (100 or 200 gm.) of a 3 to 1,000 salt solution, supplemented by alkaline mineral waters. Saline infusion is particularly useful also when diarrhea sets in; the diarrhea alone is frequently responsible for the serious collapse.

160. Treatment of Asthma.—Weiss endorses Brügelmann's explanation of asthma as invariably the result of irritation of the respiratory center, and his treatment based on this conception. Brügelmann has had 3,510 patients with asthma during the last thirty years, and has made a special study of the traumatic, reflex and toxic factors that may irritate the respiration center and thus induce asthma in the predisposed. The whole horde of reflexes may act on the respiratory center, reflexes from the eyes, ears, nose, throat, stomach, intestines, sexual organs, cold feet and skin, etc. The toxic action of the insufficiently oxidized blood, as with heart and kidney disease or after excessive exercise, dancing, running, etc., is a prominent factor in the development of the attack of asthma, but the greatest light was thrown on the whole subject, he asserts, by his observation of the effect of inhalation of an atropin spray. This frequently arrested at once an attack of asthma, as also painting the nasal mucosa with atropin-cocain solution. The special points where the atropin exerted this action seem to be restricted to the region behind the uvula, the tonsils and their vicinity. The asthma is at once arrested and there is no further disturbance as long as the paralyzing action of the drug on the region lasts, no matter whether the asthma is of traumatic, reflex or toxic origin. This, he says, confirms the assumption that this region is the seat of the spasmodic contraction and, further, that the morbidly irritated respiration center elicits this spasmodic contraction as its normal reaction. The aim in treatment should be to free the respiration center from the injurious influence of morbid reflex stimuli and the action of toxins; consequently all the organs must be examined to discover the source of the reflexes and all put in good order and functional affections cured. The asthma specialist must therefore be skilled in rhinology, gynecology, electrotherapy and pneumatotherapy and be a master of suggestion to cure the purely functional disturbances. But success in the end will well repay his efforts.

Wiener klinische Wochenschrift, Vienna

October 6, XXIII, No. 40, pp. 1403-1438

161 T. Schwann, 1810-1882. V. v. Ebner.
162 Regulation of the Respiration in Pathologic Conditions. O. Porges, A. Leimdorfer and E. Markovici.
163 *Apparatus for Conservative Office Treatment of Fractures of the Patella, Olecranon and Calcaneum. E. Fischer.
164 *Occurrence of Tonsillitis During Tuberculin Treatment. (Vorkommen von Anginen bei der Anwendung von Tuberkulinpräparaten.) R. Krämer.
165 Successful Suture of Ulnar Nerve Thirteen Years After Trauma. G. Stiefler.

October 13, No. 41, pp. 1439-1470

166 *Fibrous Sclerotic Paranephritis. O. Zuckerkandl.
167 Elimination of Sugar After Partial Removal of the Pancreas. (Zuckerausscheidung nach partieller Pankreasexstirpation.) F. Reach.
168 Oxydasis and Peroxydasis. C. Kreibich.
169 *Hepato-Duodenostomy. (Zur Chirurgie der Gallengänge.) Doberer.

163. Device for Ambulant Treatment of Fracture of the Patella, Olecranon and Calcaneum.—Fischer prevents the loosening of the adhesive plaster dressing with these fractures by a spring device which holds the ends of the plaster taut. It can be improvised with a piece of hard wood about 1 foot long, ¼-inch wide and ⅜ inch thick, with a spool fastened at each end. A cross-bar is stitched in the crossed ends of the adhesive plaster and a string from each passes over the spools at the end of the wood and is fastened to an iron ring. A rubber tube is used to tie the two rings together, the pressure applied being sufficient to bend the wood like a bow; this elastic pressure stretches the ends of the plaster with such force as to prevent any loosening. A similar device is made of two or three sheets of steel of the same shape, with prongs at each end to hold the crossed ends of the plaster dressing. This spring looks like a miniature wagon spring. There is no direct pressure on the limb but the device holds the stumps together with a permanent force that can be regulated, while the patient is able to be up and about. The joint can be moved under the spring device without spreading the stumps in apposition, thus obviating the danger of ankylosis. Another advantage is that the pressure is applied to the front of the fragments and thus prevents their tilting up. His article is accompanied by twenty illustrations showing the device as he has applied it in ten cases of fracture of the patella and in fracture of the olecranon or calcaneum. The diastasis was from 2 to 3.5 cm., but the fracture healed with consolidation of the bone and complete restitution of function in all the patella cases. He applies the plaster in three layers, slitting each part half way and spreading the slits to form a fan; a few stitches at the base of the slits holds them firm.

164. Tonsillitis During Tuberculin Treatment.—Krämer thinks that it is more than a mere coincidence that a process resembling follicular tonsillitis developed in sixteen out of seventy cases of various tuberculous eye affections in which the patients were being given tuberculin treatment. There was no apparent connection between the cases, either in time or locality, and tonsillitis is rare in an eye clinic, and none of the other patients developed tonsillitis. These facts suggested that the angina was a local reaction to the tuberculin, some tuberculous process in the tonsils flaring up. This assumption is sustained, he declares, by Reimann's discovery of foci in the tonsils in every patient at his sanatorium with tubercle bacilli in the sputum and also in 6 per cent. of all the others. Spengler has recently called attention to a reaction angina under tuberculin treatment. The brief duration and the lesser general indisposition distinguish this angina from ordinary follicular tonsillitis.

166. **Treatment of Sclerotic Paranephritis.**—Zuckerkandl calls attention to a special form of nephritis which requires a different treatment. The kidney becomes embedded in a fibrous mass of indurated tissue, and when this has occurred the organ has long since ceased normal functioning. It is generally small in comparison with the fibrous bed, but it is always completely destroyed, either by suppuration, induration or fatty degeneration. The discovery of the fibrous sclerosis around the kidney demonstrates that the organ within is profoundly degenerated, and often the seat of a latent process. Its removal is urgently indicated, but it is not necessary to remove the capsule. He has shelled out the kidney from its capsule in over a dozen cases of this kind, and the results have been constantly excellent, so that he commends this technic as the routine intracapsular nephrectomy procedure for fibrous sclerotic paranephritis. No harm, he says, results from leaving the indurated mass and the capsule.

169. **Hepato-Duodenostomy.**—Doberer gives an illustrated description of a case of bile fistula in which it was not possible to utilize the hepatic duct for drainage, and he consequently sutured the duodenum directly to the main intrahepatic biliary duct.

Zeitschrift für Urologie, Berlin

October, IV, No. 10, pp. 729-808

170 Gas in the Urine. (Pneumaturie.) E. Sörensen.
171 Action of Prostate Extract. (Wirkung von Prostatapresssäften.) A. Gotzl.
172 Three Refractory Cases of Gonorrhea. E. Steffen.
173 *Treatment of Chronic Gonorrhea with Vibration Massage. (Die Behandlung der chronischen Gonorrhoe mit Wasserdruckspülungen, Spülmassage und Wasserdruckmassage.) H. Dreuw.
174 Improved Cystoscope. E. R. W. Frank.

173. **Vibration Massage in Treatment of Gonorrhea.**—Dreuw's method of applying the water jet vacuum pump in combination with a perforated catheter for rinsing out and massaging the urethra, was briefly described in THE JOURNAL, Oct. 1, 1910, page 1237. His experiences with it to date in twenty-one cases have been very encouraging, he states.

Zentralblatt für Chirurgie, Leipsic

October 15, XXXVII, No. 42, pp. 1361-1392

175 *Possible Dangers of Adrenalin-Saline Infusion. (Ist die Infusion von Adrenalin-Kochsalzlösung ungefährlich?) W. Merkens.

175. **Fatality After Adrenalin-Saline Infusion.**—Merkens' patient was a man of 50, with glycosuria for several years. The condition the day after an appendicectomy was grave but not hopeless, the pulse was 140, but regular, and there was occasional vomiting. One liter of physiologic salt solution was then infused into a vein in the arm, with ten drops of the ordinary adrenalin solution. The patient became pale and restless, a rigor soon followed, the pulse grew smaller and faster, and death ensued in a few hours. The adrenalin solution was not quite fresh; most of the contents of the bottle had been previously used, but the fluid was perfectly limpid.

Zentralblatt für Gynäkologie, Leipsic

October 15, XXXIV, No. 42, pp. 1345-1376

176 *Operative Treatment of Dyspareunia. K. D. Josephson.
177 Pernicious Vomiting of Pregnancy Arrested by Thyroid Treatment. (Das Schwangerschaftserbrechen, heibar durch Thyreoidin.) A. Siegmund.

October 22, No. 43, pp. 1377-1408

178 Congenital Acute Nephritis with Universal Dropsy in Twins Born to Mother with Acute Nephritis. A. Sitzenfrey.
179 Cervical Cesarean Section. (Zur Frage des cervicalen Kaiserschnittes.) W. v. Streit.
180 Thyroid Treatment for Stimulation of Lacteal Secretion. (Der Milchmangel der Frauen, heilbar durch Thyreoidin.) A. Siegmund.

176. **Operative Enlargement of Infantile Vagina.**—None of the women in the three cases reported had vaginismus, and Josephson thinks that an anatomic basis for the latter could be discovered in many cases if sought for. In one of the women the smallness of the vagina was the result of cicatricial constriction, in the others it was a primary lack of development. His operation was a lengthwise incision carried through the vulva up into the vagina for about 3 cm., about a fingerbreadth on each side of the median line. The lips of each incision were then drawn sideways and sutured together again in such a way as to bring the incision across instead of lengthwise of the vagina. Between the two incisions is a stretch of intact vulvar mucosa, enlarging the vagina to this extent. The double incision respects the muscles better than a single incision, while the lumen is correspondingly enlarged. In one case he preceded the operation with progressive dilatation of the vagina, and in another he found three incisions necessary.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 9, XXXI, No. 121, pp. 1273-1288

181 Comparative Tests of Stomach Functioning. (Intorno ad alcuni metodi proposti per lo studio delle funzioni gastriche.) M. V. Carletti.
182 Influenza Favors Development of and Aggravates Other Infections. A. Marazzano.

October 11, No. 122, pp. 1289-1296

183 *Traumatic Neuroses. C. Mannini.

October 16, No. 124, pp. 1305-1320

184 Five Cases of Fracture of the Skull. A. Fontana.

October 18, No. 125, pp. 1321-1328

185 Plastic Operations on Vagina for Vesicovaginal Fistula. O. Betti.

October 20, No. 126, pp. 1329-1336

186 Foreign Bodies in the Esophagus. C. Rusconi.

183. **Traumatic Neuroses.**—Mannini relates the particulars of a case which emphasizes the necessity for caution in examining and managing a patient after an accident. In his case one physician after another seems to have added his share of suggestion of symptoms and consequences of the trauma until the patient became an incurable invalid, presenting the clinical picture of a cerebellar disease and yet no anatomic cause could be found for the syndrome at necropsy. The aggravation of the syndrome after each visit to a physician was a noticeable feature of the case. Mannini warns that persons after an accident require the same circumspection and reticence on the part of physician as confirmed neurasthenics and hysterics. They are peculiarly liable to be affected by unintentional and even unconscious suggestion and imitation. This fact should be borne in mind in all intercourse with them, and it should also serve as a guide in treatment.

Policlinico, Rome

October 9, XVII, No. 41, pp. 1283-1314

187 *Cerebellar Tumors Without Special Symptoms. A. Ceconi.

October 16, No. 42, pp. 1315-1346

188 Ehrlich's "606" in 156 Cases of Syphilis. P. de Favento.
189 Abdominal Inguinal Hernia with Ectopic Testicle. (Ernia inguino-superficiale addominale con ectopia del testicolo da inserzione anomala del gubernaculum testis.) M. Fasano.
190 Epidemic of Diphtheria at Minerbio. G. Ungarelli.

October, Medical Section No. 10, pp. 429-476

191 Favorable Action of Roentgen Rays on Experimental Tuberculous Joint and Gland Disease. F. Ghilarducci.
192 The Presystolic Murmur and the Duplication of the Second Sound in Mitral Stenosis. C. Pezzi.

187. **Cerebellar Tumors without Special Symptoms.**—In the case reported by Ceconi a young man had severe headache for six months with only occasional slight remissions. The headache involved the right parietal region, sometimes the whole right side of the head, or was diffuse, aggravated by movements or touch. During the last three months the vision had grown weaker, but there were no vomiting, vertigo or disturbances in the gait except slight weakness apparent in the left leg after walking. The knee-jerk was much exaggerated on the left side. The patient died forty days after entering the hospital, but there were no special cerebellar symptoms at any time. Necropsy revealed a large caseified tubercle occupying nearly the whole of the right hemisphere of the cerebellum, with a smaller tubercle in the center of the left. He discusses the differentiation of such cerebellar lesions and the localization of the tumor explaining the absence of ataxia

in some cases. Luciani's experiments have confirmed the assumption that other organs can vicariously substitute the lacking cerebellar functioning. Experience has also demonstrated that a gradually growing tumor may push the nerve fibers aside without really injuring them, so that normal functioning may long persist.

Riforma Medica, Naples

October 10, XXV, No. 41, 1121-1148

193 Anaphylaxis from Gastric Juice with Cancer. (Anafilassia da succo gastrico.) S. Livierato.
194 Decapsulation of the Kidney in Experimental Mercury-Bichlorid Intoxication. (Lo scapsulamento del rene nelle intossicazioni sperimentali da sublimato.) G. Ferrero.

Hospitalstidende, Copenhagen

September 14, LIII, No. 37, pp. 1057-1080

195 Physiologic Fluctuations in Leukocyte Count. (Fysiologiske Svingninger i Leukocyttallet.) V. Ellermann and A. Erlandsen. Commenced in No. 36.

September 21, No. 38, pp. 1081-1104

196 Punctate Erosions on Uterine Cervix with Gonorrhea. (Erosio punctata postvesiculosa colli uteri hos Gonorrepatienter.) L. Nielsen.

October 5, No. 40, pp. 1129-1152

197 *New Safranin Test for Sugar in Urine. (En ny Metode til *Sukkerbestemmelse i Urin.) K. A. Hasselbalch and J. Lindhard.* Commenced in No. 39.

October 12, No. 41, pp 1153-1176

198 Treatment of Acute Appendicitis. A. Møller.

197. Simple Test for Sugar in the Urine.—Hasselbalch and Lindhard describe a new test which they say makes it possible for the busy practitioner without laboratory facilities to determine readily whether the applicant for life insurance, for instance, has pathologic proportions of sugar in the urine. Their technic dispenses with the necessity for removing the albumin beforehand, and the error from the "autoreduction" of the urine is less, they assert, than with any other of the usual methods, the alkaline solution of safranin used not being reduced by uric acid or creatinin. The findings with this and the ordinary tests in long series of normal and glycosuric persons are tabulated for comparison, all apparently confirming the reliability of the test and the keeping properties of the reagent. This is a 1 to 10,000 solution of safranin; it does not seem to be affected by alkalies or heat, but the tint changes on the addition of sugar, the deep red tint fading away and the colorless fluid then assuming a yellow or pinkish yellow tint or fluorescence. One c.c. of the 1 to 10,000 safranin solution and 1 c.c. of a 1 per cent. solution of potassium hydrate are mixed and the urine added drop by drop, after which the glass is placed in the boiling water bath for three minutes. The above mixture of 1 c.c. of each fluid reduces about 0.25 mgm. of grape sugar, from which it is easy to compute the approximate urine proportion in the urine. The test may be regarded as giving negative findings if the characteristic change of tint does not follow when ten drops of urine are added to a mixture of 3 c.c. each of the safranin and the potassium hydrate solutions and the whole is heated in the boiling-water bath for three minutes. Certain other sugars give the reaction as well as grape sugar.

Nordiskt Medicinskt Arkiv, Stockholm

XLIII, Surgical Section, Nos. 1-2. Last indexed, Nov. 12, p. 1772

199 *Kidney Stone. (Zur Diagnose und Therapie der Nephrolithiasis.) B. Flöderus. Commenced in vol. xlii.

199. Kidney Stone.—Floderus here makes a contribution to the study of nephrolithiasis, which he discusses from various points of view, his article embracing 261 pages, with summaries of fifty-six cases. The article is in German and is accompanied by sixteen plates and ten pages of alphabetically arranged bibliography. He remarks that in few surgical affections is the early and exact diagnosis more important for the ultimate outcome than with kidney stone. He discusses the Roentgen-ray findings and the sources of error from them, advising Roentgen examination after each attack of colic, and remarking that the stereoscopic picture is especially instructive in nephrolithiasis. If the size of the stone permits the likelihood of spontaneous expulsion, internal treatment is justified, as also in most cases in which the pain is bearable and the hematuria slight, but an operation may be considered earlier in the young and robust.

Norsk Magazin for Lægevidenskaben, Christiania

October, LXXI, No. 10, pp. 1011-1130 and Supplement

200 Occurrence of Leprosy Bacilli in the Stools. (Om forekomsten af Leprabaciller i fæces hos knudede Spedalske, disse bacillers kilde og senere skjæbne.) C. Boeck.
201 Trophoneurotic Changes in the Bones and Joints in Leprosy. F. Harbitz.
202 Cancer in the Samnanger District. (Lidt kræftstatistik fra Samnanger.) G. Gjestland.
203 Heredity of Cancer and Familial Cancer. (Omkring kræftspørgsmaalet: Arvelighed. Cancer à deux.) M. Søegaard.
204 Diabetes in Children. (7 dødsfald af diabetes mellitus hos børn hvoraf de 5 hos søsken.) T. Langaker.
205 Two Cases of Operative Cure of Invagination of the Descending Colon. W. Holst.
206 Distribution of Cancer According to Age as Basis for Study of Its Etiology. (Cancerens aldersfordeling.) K. Andersen.
207 The Thymus in Relation to the Growth. K. Andersen.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

A Text-Book of Bacteriology. A Practical Treatise for Students and Practitioners of Medicine. By Philip H. Hiss, Jr., M.D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, and Hans Zinsser, M.D., Associate Professor in Charge of Bacteriology, Leland Stanford, Jr., University, Palo Alto, Cal. Cloth. Price, $3.75. Pp. 745, with 156 illustrations. New York: D. Appleton & Co., 1910.

Oxypathie. Von Dr. Wilhelm Stoeltzner, Direktor der Universitäts-Poliklinik für Kinderkrankheiten in Halle a. S. Paper. Price, 3 marks. Pp. 92. Berlin: S. Karger, Karlstrasse 15, 1911.

Die Paralysis agitans. Eine Monographie von Dr. Kurt Mendel, Nervenarzt in Berlin. Paper. Price, 4 marks. Pp. 106. Berlin: S. Karger, 1911.

A Study of the After-Results of Abdominal Operations on the Pelvic Organs. Based on a Series of 1,000 Consecutive Cases. By Arthur E. Giles, M.D., Surgeon to the Chelsea Hospital for Women. Cloth. Price, 10 shillings 6 pence. Pp. 251. London: Baillière, Tindall & Cox, 8 Henrietta St., Covent Garden, 1910.

Les Véritables Centres du Mouvement et l'Incitation Motrice Volontaire (ou l'Acte de Volonté). Par le Professeur Dr. Albert Adamkiewicz. Traduit de l'Allemand par la Baronne Henri de Rothschild. Paper. Price, 1 franc 50. Pp. 77. Paris: Jules Rousset, 1 Rue Casimir-Delavigne, 1910.

Die Faeces des Säuglings und des Kindes. Die Bedeutung und Technik ihrer Untersuchung. Von Dr. Adolf F. Hecht, Kinderarzt in Wien. Mit einem Vorwort von Dr. Th. Escherich. Paper. Price, 8 marks. Pp. 186. Vienna: Urban & Schwarzenberg (American Agents, New York: Rebman Co.), 1910.

Discurso Leido en la Solemne Inauguración del Curso Académico de 1910 a 1911, Universidad Central. Por el Doctor D. José Andrés Irueste, Catedratico de la Facultad de Ciencias. Paper. Pp. 44. *Madrid: Imprenta Colonial (Estrada Hermanos) Calle de* Fuenterrabia, Num. 3, 1910.

Les Organismes Primordiaux, Leur Origine, Leur Constitution, Leur Génération. Evolution et Transformisme, Tome Quatrième, Quatrième Partie. Par Albert et Alexandre Mary. Paper. Price, 3 francs 50. Pp. 395, with illustrations. Paris: Jules Rousset, 1911.

Internal Secretions from a Physiological and Therapeutical Standpoint. By Isaac Ott, M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Paper. Price, $1. Pp. 133, with illustrations. Easton, Pa.: E. D. Vogel, 1910.

The Diseases of Infants and Children. By Edmund Cautley, M.D., Cantab., Senior Physician to the Belgrave Hospital for Children. Cloth. Price, $7 net. Pp. 1042. New York: Paul B. Hoeber, 69 East 59th Street,, 1910.

The Sexual Disabilities of Man and Their Treatment. By Arthur Cooper, Consulting Surgeon to the Westminster General Dispensary. Second Edition. Cloth. Price, $2 net. Pp. 204. New York: Paul B. Hoeber, 1910.

Thirty-Third Annual Report of the Board of Health of the State of New Jersey, 1909, and Report of the Bureau of Vital Statistics. Cloth. Pp. 526, with illustrations. Bruce S. Keator, Secretary, Trenton, N. J.

Einführung in die experimentelle Therapie. Von Dr. Martin Jacoby, Professor der Pharmakologie a. d. Universität Heidelberg. Paper. Price, 5 marks. Pp. 180, with illustrations. Berlin: Julius Springer, 1910.

La Vaccinothérapie. Par Emm. Pozzi-Escot. Collection Les Actualités Chimiques et Biologiques, Tome XIII. Paper. Price, 1 franc 50. Pp. 106, with 10 illustrations. Paris: Jules Rousset, 1910.

E. Merck's Annual Report of Recent Advances in Pharmaceutical Chemistry and Therapeutics. 1909, Vol. XXIII. Paper. Pp. 381. Darmstadt: E. Merck, Chemical Works, 1910.

The Letters of Dr. Betterman. By Charles E. Blanchard, M.D. Paper. Price, 75 cents. Pp. 140. Philadelphia: J. D. Albright, 1910.

Medical Chaos and Crime. By Norman Barnsby, M.D. Cloth, Price, $2 net. Pp. 384. New York: Mitchell Kennerley, 1910.

The Journal of the
American Medical Association

Published under the Auspices of the Board of Trustees

Vol. LV, No. 22 Chicago, Illinois November 26, 1910

ESOPHAGEAL STENOSIS FOLLOWING THE SWALLOWING OF CAUSTIC ALKALIES

NECESSITY FOR COMPULSORY LABELING OF POISONS SOLD BY GROCERS *

CHEVALIER JACKSON, M.D.
PITTSBURG, PA.

Four little children threatened with starvation because of a cicatricial esophageal stenosis due to the swallowing of some form of caustic alkali to which the laxity of our laws permitted them to be exposed were under my observation within a year. These four cases are my excuse for addressing you on this subject. The law requires that the druggist shall label corrosive poisons "Poison" and the careful druggist adds antidotal advice. Next door to the druggist the grocer sells corrosive poisons having on the label not only no hint of caution, but having directly misleading statements. such as "won't injure the hands," "will not harm the most delicate fabric," etc. One brand of concentrated lye is marked "Caution." When I encountered this I thought, "At last I have found one preparation on the market whose manufacturer has a conscience that compels him to give some advice protective to little children." Alas, the underwriting, "Be sure to replace the lid after using," was intended only to prevent deliquescence of the granulated contents.

It is the general impression that concentrated lye is a relic of the old days of home-made soaps, but investigation shows that it is in common use in the household for labor-saving cleansing of all kinds. Its harmful effect on the hands conveys to the thoughtful some hint of the caustic nature of its contents. But the frequency with which patients with esophageal stricture, following the swallowing of concentrated lye, come in an almost fatal state of inanition to the esophagoscopist is an index to the thoughtlessness of the users of concentrated lye, and an urgent call for legislation that shall compel the manufacturer to label concentrated lye containers "Poison" and to state a few antidotes, even if this does diminish slightly the sale of such products.

Esophageal stricture from the swallowing of commercial lye has been for many years a lesion of common observation by those interested in the esophagus. The frequency declined with the more general substitution of cheap commercial soaps for the home-made product: but concentrated lye is still in extensive use for general scrubbing and cleansing purposes. Furthermore, strictures of the esophagus are again on the increase owing to the flooding of the market with a large number of proprietary "cleansers" for household use and "washing powders" for laundry use.

I have seen three cases of the most severe ulceration and sloughing of the esophagus from the swallowing of *strong solutions of three of these proprietary preparations.* I have had the preparations analyzed and all contained similar ingredients: an abrasive, a strong powdered soap, and a caustic alkali—soda ash. The proportions varied from 8 per cent. in the cleaners up to 40 and 50 per cent. in the laundry powders; but in none was the corrosive alkali so diluted as not to be caustic to the delicate esophageal mucosa of a child. And worst of all, the mixture was not thorough; therefore some portions were more concentrated than others. so that under certain conditions it would be possible for a child to get a concentrated dose of caustic. *Another thing* which doubtless contributes to the danger is the insoluble nature of the abrasive and the slower solubility of the soap. Thus a little water dissolves out the alkali in strong solution.

The accident in one case I have seen occurred through the child's swallowing the rinsings of the almost empty can. The economical mother was endeavoring to extract the dregs for use; and, totally unsuspicious of a preparation which could not "injure the most delicate fabric," set down the can within reach of the child. In another instance the cleansing powder had been sprinkled on the dishes in the dish-pan. From one cup it was not removed by rinsing, the powdered soap in its composition making it adherent, and from this cup the child drank. In the third instance the child drew water from a faucet into a cup that had been used to measure out a quantity of a proprietary washing powder for laundry use.

On not one of the containers of these three widely advertised proprietary caustic preparations was there *one hint of the dangerous nature of the contents.* There was no word of advice that some vinegar or oil or milk or cream might lessen the likelihood of the child dying of the agonizing burns, or the subsequent ulcerative esophagitis or stricture. On the contrary, the most misleading statements as to the harmlessness of the preparations are on every package, in every magazine, in every street car. One manufacturer's agent to whom I spoke said: "Why, if we labeled our goods 'poison' and gave an antidote nobody would buy them." Comment is unnecessary.

My reason for bringing this matter before this section is the hope that some of you will take the matter up and see that the laws that compel the druggist to label corrosives that go into the medicine closet "poison" shall likewise compel the manufacturer so to label the corrosives that are infinitely more dangerous because they go into the kitchen. Considering the cosmopolitan character of our population, and especially of our domestic servants, the caution label should be in many languages.

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* Chairman's address before the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, St. Louis, June 7-10, 1910.

If the existing laws do not apply to the grocer as well as to the druggist, then, you doubtless all agree with me in the opinion that the laws should be amended. I leave this to those better able than I.

In conclusion, I beg you to look into your own kitchens and find whether or not caustic alkalies are used with a reckless disregard of their poisonous nature.

1018 Westinghouse Building.

CHANGES IN THE NOSE AFTER WIDENING THE PALATAL ARCH *

L. W. DEAN, M.D.
IOWA CITY, IOWA

For some time we have known that widening the palatal arch resulted in widening of the nasal chambers. At least, we have had every reason to conclude this from the reports of many patients regarding the great improvement in breathing after this had been done. I am sure that all are familiar with the work of G. V. I. Brown and Nelson Black on the improvement in breathing of patients with contracted nares after widening the arch; also the influence it has had on the straightening of deviated septa.

In 1908 I showed before this Section by actual measurement the increase in the breathing-space of the nose in green skulls after widening the palatal arch. So far as I have been able to determine, these measurements have not been reported as having been made on a living subject. As there is still some skepticism regarding the increase of breathing space by widening the palatal arch I wish to report the measurements of a case.

As long as we depend on patients' expressions regarding their improvement there may be a slight basis for doubt. With the actual measurements before us there can be none. This method of measuring has been the result of several years' work. It has been tried repeatedly with constant results, on patients on whom no work has been done. To measure the nose I use a septimeter (see illustration) devised by myself for this purpose.

I will give the history and measurement of one case only, as that will serve as an illustration. I made no measurements myself; all were made at my request by Dr. W. F. Boiler, assistant rhinologic surgeon to the University Hospital, because I wished them to be made by one not interested in the results.

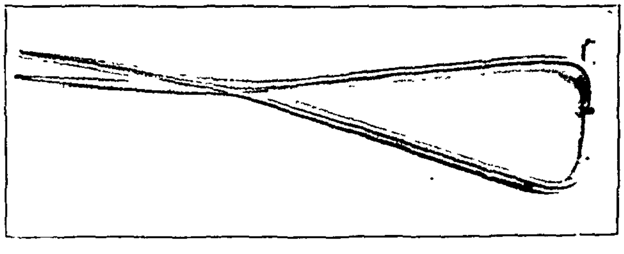
All measurements were made under the same conditions: namely, with the mucous membrane shrunken by continuous application of cocain 20 per cent. and adrenalin 1 to 1,000 for twenty minutes.

Patient.—Miss L. D. Y., aged 8, referred by Dr. Jones, of Kalona, Iowa. The patient gave a history of being a constant mouth-breather. She could not remember ever having been able to breathe through her nose. She suffered very much from temporal headache. This was not influenced by use of the eyes. The attacks of headache were not periodic. The headache was made worse by taking cold. She took cold very easily.

Examination.—Patient was very dull mentally. The face was narrow, owing to poor development of the superior maxillæ. The nose was very thin. The turbinates were normal in size but pressed tightly against the septum. On the right side was a medium-sized posterior spur.

Treatment.—It was a typical case of the nasal breathing being impossible because of the nose being too narrow, not because of pathologic tissue. The spur was removed. Two months later nasal breathing was little better than at first. The palatal arch was exceedingly high and narrow. As the turbinate tissue was normal there could be no excuse for removing it, entire or in part, so I asked Dr. G. V. I. Brown to widen the arch. Expansion bands were fitted to the teeth on each side and attached with rigid metal bars. Across the mouth a tube attached firmly to the connecting bar upon one side, fitted over a threaded bar, also solidly attached to the bar on the opposite side. A nut was adjusted, which when turned made pressure across the mouth. The appliance was cemented into place and when finally adjusted, was so arranged that pressure was applied directly across the palate at its narrowest portion with resistance against all the teeth from the cuspids to the molars upon each side. When the maxillary bones had been sufficiently separated and the nose correspondingly widened, an appliance was adjusted with a screw, nut and tube by which pressure was exerted from before backward. When the arch had been sufficiently lengthened on this side to admit it, the teeth which had previously occupied a portion of the palate, were drawn outward into proper line.

In the accompanying table are three sets of measurements: Column A shows the measurements before widening was begun; Column B, the measurements made during the widening process; the measurements in Column C were made after the widening was completed. The measurements are expressed in units as measured in the handle of the septimeter.



Septimeter for measuring the nose.

MEASUREMENTS BEFORE, DURING AND AFTER THE WIDENING PROCESS MAY 28, '09.

	A.		B.		C.	
	R.	L.	R.	L.	R.	L.
Anterior end inferior turbinate to septum.. ...	5	6	8	9	9	10
Middle inferior turbinate to septum	5	4	7	6	7	6
Posterior end inferior turbinate to septum......	10	12	10	12	12	12
Anterior end middle turbinate to septum.......	2	2	2	3	4	4
Middle middle turbinate to septum	1	2	2	2	2	4

Result.—The subjective improvement of the patient was the very best. She spoke of breathing comfortably for the first time during her life. The objective improvement was very manifest. She is now a nasal breather both by day and night. Her general health is better. She is certainly wonderfully improved mentally. Her face is broader.

The figures show that the widening effects the nose throughout antero-posteriorly. Also the middle meatus is affected as well as the inferior. Consequently the sense of smell should be benefited. I regret very much that observations along this line have not been made.

These measurements corroborate the measurements that were made on a green skull and reported to this Section two years ago.

ABSTRACT OF DISCUSSION

DR. EUGENE S. TALBOT, *Chicago:* These measurements show the actual conditions present when the dental arch is spread. One important point which should be emphasized is that the turbinates are not destroyed. While I am not a rhinologist, it seems to me that that is the last thing which should be done. The dental arch should be spread first, and then if the rhinologist thinks there is plenty of room the operation should not be undertaken. It is important that as much mucous surface should remain in the nose as possible.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

Dr. M. H. Fletcher, Cincinnati: In my own mind there is a question as to the solidity of the tissues when pressure is put on them. A suture, particularly of the skull, is particularly strong in its indentation. Is it always sure that division will occur in the suture between those two bones and divide in the nose? Have any of you had any experience in having separation at any other place than where you desired? It is impossible for us to see the thickness of the bone. I can conceive of a case of very heavy bones, in which there would not be separation in the proper place. Have any of you had any such experience? I should be glad to have any light on the question whether or not a separation at any other place than the suture would have a good or a bad result. Separation must come on one side of the septum or the other, must it not?

Dr. G. V. I. Brown, Milwaukee, Wis.: No, the ideal condition is separation between the central incisors. In view of the fact that the premaxilla is completely divided from other divisions of the superior maxilla in early life, it is curious that ossification becomes so complete on each side, and the median suture so marked. There is no longer a question as to where and how the maxillæ separate. One of the questions evidently applies to those cases in which the suture is dovetailed. My own opinion is that under such conditions the little interlocking portions of the suture are fractured.

In some few instances we have not had the outward and visible sign of maxillary division, which of course is indicated by separation of the incisors. In those cases we have usually had good results also, but they were not such unusual types as Dr. Dean's patient. Sometimes I think that the premaxilla does not always unite in exactly the same way, because the separation occasionally appears between the central and lateral instead of between the two centrals. This ultimately readjusts itself, because an increase on one side gives more freedom for the septum to adjust itself.

Dr. L. W. Dean, Iowa City, Iowa: I do not like to theorize in this matter, so far as changes in the nose are concerned. It has not been worked out completely, and I am afraid Dr. Brown and I would not agree as to how we get straightening of the septum after widening the arch. Work is being done, and a year from now it will be more definitely decided. I think this patient is going to have more breathing-space a year from now than she has at present. When I saw this patient after the first widening had been done, I could put a lead-pencil in between the incisors in front. I hastily wrote to Dr. Brown and got a letter from him that he was ready to have these teeth brought together. This was done very nicely. We have widened the arches of skulls of subjects over 40 years of age. They have all opened along the median line.

AN APPARATUS FOR SUPPORTING AND HOLDING THE HEAD AND SHOULDERS IN CEREBELLAR AND HIGH SPINAL OPERATIONS

HOMER B. SMITH, M.D.
FARGO, N. D.

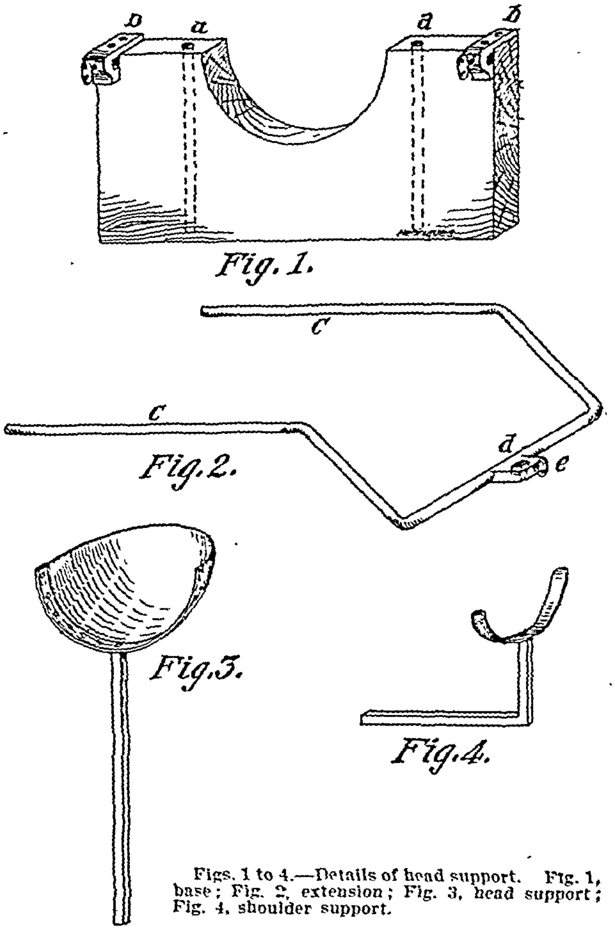
The difficulties attending suboccipital and high spinal operations are largely due to the depth of the cerebellum and cord. Access to these parts is not easy on account of the difficulty of holding the patient's head and shoulders in a position that will allow a fixed field of operation, and at the same time not interfere with the patient's respiration and the administration of the anesthetic. This is especially true in trephining over the cerebellum with the patient in the prone position.

I devised the apparatus here described to obviate these difficulties. I first demonstrated its usefulness at the Boston Children's Hospital in an operation for cerebellar tumor. The satisfactory use to which this simple apparatus has been put in the past two years by various Boston surgeons, both in operations for cerebellar exploration and cervical laminectomy, leads me to believe that as an aid in these operations the apparatus is worthy of mention.

DESCRIPTION

Figure 1 gives details of the head support. The apparatus consists of a base (Fig. 1), an extension (Fig. 2), a head support (Fig. 3), and two shoulder supports (Fig. 4).

The base (Fig. 1) is an oak plank, 17 by 8 by 1¼ inches. A semicircular piece, 8 inches in diameter, is cut out in front. There are two one-half inch holes, bored through the width of the plank 10 inches apart (a, a). These are to accommodate the extension. There are two set-screws, one at either corner in front (b, b), to receive the shoulder supports.



Figs. 1 to 4.—Details of head support. Fig. 1, base; Fig. 2, extension; Fig. 3, head support; Fig. 4, shoulder support.

The extension (Fig. 2) is a three-eighths-inch iron rod, 48 inches long, so bent as to form two horizontal arms 18 inches long (c, c), and a transverse rod (d) 10 inches long. The horizontal arms are bent downward at an angle of 45 degrees 13 inches from the ends. At the center of the transverse rod is a set-screw (e) to receive the head support.

The head support (Fig. 3) is a three-eighths-inch square iron rod 12 inches long, to one end of which is attached a semicircular piece of iron 7 inches in diameter and one-half inch wide. To this iron is riveted a heavy piece of mill-board which has been molded to make a quarter sphere.

The shoulder supports (Fig. 4), two in number, are three-eighths-inch square iron rods 10½ inches long, and bent at right angles 7 inches from the ends. To the short or upright arms are attached semicircular pieces of iron one-half inch wide and 4 inches in diameter.

In use the head piece is covered with a sterile towel and the shoulder pieces are padded and bandaged. The apparatus is attached to the ordinary wooden operating table by two iron clamps.

The head piece, extension and shoulder pieces permit wide adjustment. The head of the patient can be raised, lowered, extended or flexed, and the shoulder pieces can be adjusted laterally to conform to the width of the patient's shoulders.

The illustration (Fig. 5) shows the apparatus complete. The diagram (Fig. 6) shows the position of a patient for operation.

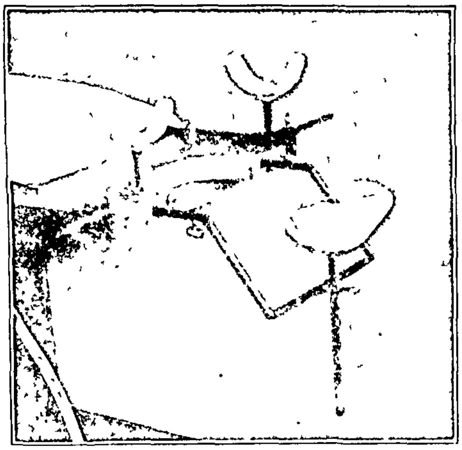


Fig. 5.—Apparatus complete.

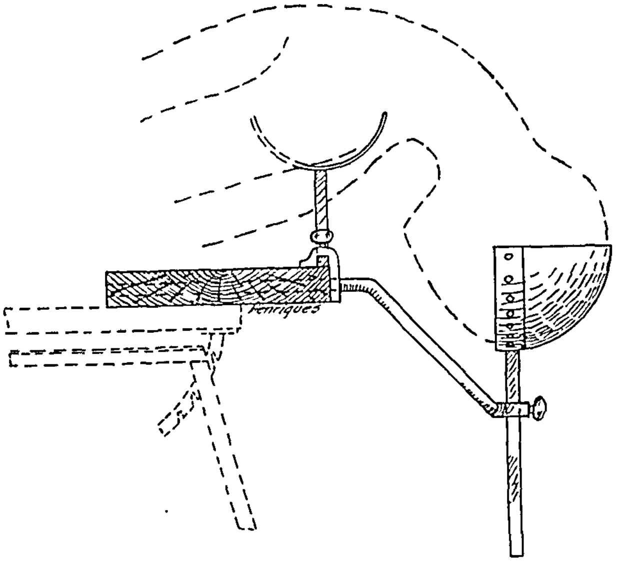


Fig. 6.—Diagram showing position of patient during operation

THE ADVANTAGES OF THE APPARATUS

The head of the patient is held in such a position as to afford a firm, immovable base against which to work.

The patient's chest is supported, allowing free respiratory movements.

The anesthetist is relieved of trying to do two things at once, namely, to hold the patient's head and give the anesthetic.

The apparatus is simple, has a wide range of adjustability and is cheap. It could be made lighter and could be more beautifully finished, thereby adding to its cost without in any great degree increasing its efficiency.

620 Front Street.

ENTEROPTOSIS, WITH SPECIAL REFERENCE TO ITS ETIOLOGY AND DEVELOPMENT

AND REMARKS ON THE RESULTS OF EXAMINATION OF FOUR HUNDRED WOMEN WITH REFERENCE TO THIS CONDITION *

RICHARD R. SMITH, M.D.
GRAND RAPIDS, MICH.

The literature dealing with enteroptosis is a most voluminous one and I shall attempt nothing but a brief review of it. The subject is so unusually complex and presents so many different phases that it has led to much theoretical discussion, much of which has proven to be of little value. Our real advance and the best papers have come from those who have based their opinions on actual observations.

To Glénard,[1] who in 1885 published his paper which to-day is a classic, belongs the credit of calling the attention of the profession to the existence of this condition. Glénard believed that the whole trouble came from a sinking of the hepatic flexure of the colon. From this conception he built a most elaborate theory, which we know to-day has but little on which to stand. Glénard, however, recognized the type of individual in which enteroptosis was found and his description of it remains a classical one.

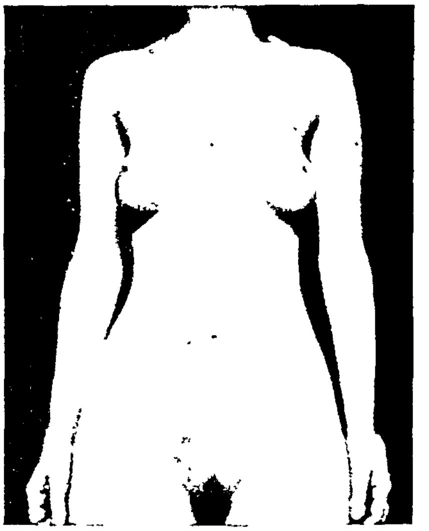


Fig. 1.—Typical enteroptotic figure. Fairly well-nourished. Muscular sufficiency poor. Thorax depth 17 cm., width 17.5 (!), index 94.5 (!), height 153 cm. (5 ft.), weight 94 lbs. Right kidney palpable; lower pole of stomach below umbilicus (gas). Pain in right side, well-marked neurasthenia. Note small size of thorax as compared with pelvis; small, long waist.

For five years after this the discussion remained confined to the French literature. In 1890, however, Ewald,[2] in a thoughtful and conservative article, brought the matter before the German profession. He gave Glénard credit for his discovery, but criticized many of his conclusions.

Stiller,[3] in 1896, pointed out the hereditary character of the condition and elaborated his floating tenth rib

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Glénard: Application de la méthode naturelle à l'analyse de la dyspepsie nerveuse: determination d'une espèce, Lyon méd., 1885, xlviii, 492

2. Ewald, C. A.: Ueber Enteroptose und Wanderniere, Berl. klin., Wchnschr., 1890, xxvi, 277, 304.

3. Stiller, B.: Ueber Enteroptose im Lichte eines neuen Stigma Neurasthenicum, Arch. f. Verdauungskr., 1896, ii, 285.

idea, which is often cited to-day. The profession has not verified the close association which Stiller seems to have found between enteroptosis and a floating tenth rib, but is inclined to look on it as an anomaly often occurring, to be sure, in the habitus enteroptoticus, but as well in other individuals and of too uncertain a connection to place much stress on. Stiller's two articles, however, reflect a most careful study and observation, and his work will always stand preeminent in the history of enteroptosis.

Perhaps the next most notable piece of work done was that of Mathes,[4] who, although particularly interested in the mechanical conditions leading to prolapse, gives a most excellent description of the habitus enteroptoticus and the body form and calls particular attention to the general nature of the trouble. Mathes' article is also based on four years of study and observation and marks a distinct advance in the study.

An article by Albu[5] last year repeats and endorses much of what Mathes has said and is an excellent and useful piece of work. Albu has apparently fallen into error, however, when he concludes that because the kidneys and livers of a large number of new-born infants are palpable, the visceral prolapse itself is congenital and exists from childhood up. To this Butler, in a paper based on a study of one hundred and fifty-five children, has called attention.

An article by Martin,[6] of Chicago, and one by Vietor[7] are well worthy of citation, since they reflect a belief that the condition points to an arrest in the development of the embryo or a reversion to a lower type.

My own interest in the subject began some five years ago and was considerably stimulated by Mathes' article. I began examining, as a matter of routine, whenever practicable, the women who came to us. Most, but not all of them, presented symptoms referable to the pelvis or abdomen. I have examined formally over 400 such women and casually many more. After the usual pelvic and abdominal examinations, the weight, height, amount and condition of adipose and muscular tissue were noted and the form of the thorax and abdomen. I then obtained the index of Becher and Lenhoff and sought to palpate the kidneys. In the standing position, the form of the trunk, back and abdomen were observed and with the pelvimeter the depth of the chest at the end of the sternum and the width at the waist line were measured. I noted also the epigastric angle and the downward slant of the lower ribs. Lastly, the stomach was dilated and, in a prone position, its lower border, as obtained by this method, was recorded. In a considerable number photographs were obtained or other special examinations made. The mass of figures obtained became long since rather unwieldy and of but moderate value for statistical purposes. The study, however, has been a most interesting one and has yielded much that has been of

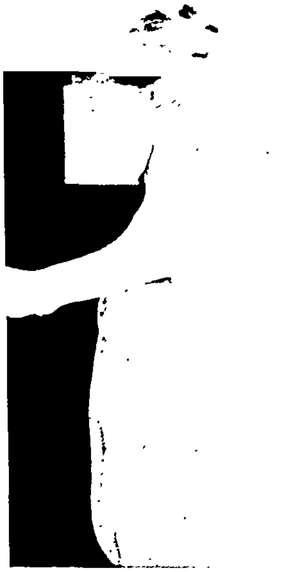

Fig. 2

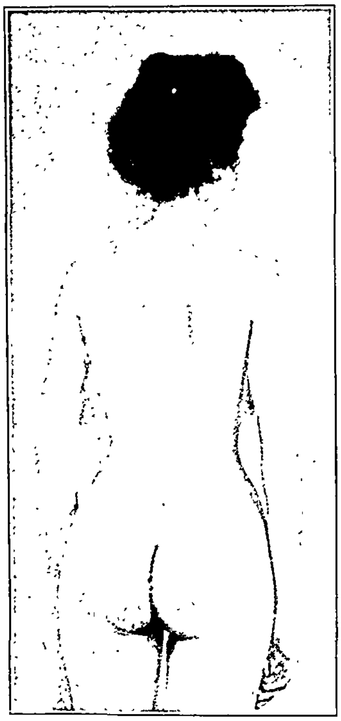

Fig. 3

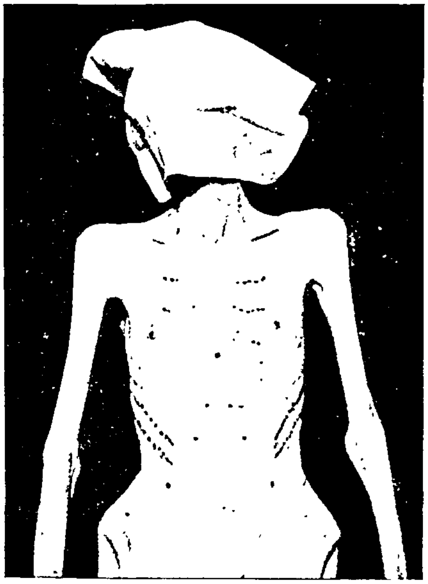

Fig. 4

Fig. 2.—Enteroptotic figure of very marked degree. Marked ill nutrition; marked muscular insufficiency. Thorax depth 13 cm. (!), waist breadth 20 cm., index 97 (!), height 147½ cm. (4 ft., 10 in.), weight 74 lbs. Palpable right kidney, lower pole of stomach in pelvis and very marked prolapse of colon (x-ray). Marked digestive disturbance, extreme and apparently hopeless neurasthenia. Note slenderness of form, extremely poor nutrition, marked lack of lumbar lordosis, rounding of shoulders (but fairly sufficient anterior abdominal walls), also smallness and collapse of chest, downward slant of lower ribs and long neck.

Fig. 3.—Typical enteroptotic figure, fairly well-nourished, little muscular insufficiency, palpable right kidney, lower pole of stomach two inches below umbilicus (gas method). Has good health. Note size of thorax and waist as compared with pelvis. Thorax depth 15 cm., width of waist 18 cm., index 88., height 170 cm. (5 ft., 6¾ in.), weight 116 lbs.

Fig. 4.—An enteroptotic figure with extreme emaciation, shown simply to bring out certain points referred to in text. Note small collapsed thorax, the sharp epigastric angle, the wide intercostal spaces above, the ribs lying close together below and slanting sharply downward and inward; the small waist with corresponding small upper abdominal cavity. Patient presents marked physical weakness, disturbances of many functions and is otherwise apparently a hopeless neurasthenic.

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[4] Mathes, P.: Ueber Enteroptose, nebst Bemerkungen über die Druckverhältnisse im Abdomen, Arch. f. Gynäk., 1906, lxxvii, No. 2, 357.

[5] Albu: Die Bewertung der Visceralptose als Konstitutionsanomalie, Berl. klin. Wchnschr., 1909, xlvi, 289.

[6] Martin, F. H.: Visceral Prolapse; Some New Points in Etiology, Surg., Gynec. and Obst., 1908, vii, 638.

[7] Vietor, Agnes C.: Introduction to the Study of the Fundamental Cause of Spanchnoptosis—Abdominal Incompetence: A Developmental Factor, Boston Med. and Surg. Jour., 1906, clv, 139

value to me. Above all, it has served to give more accurate information as to the relationship existing between the various phenomena presented by the condition under discussion. In many phases of the matter, as in those that have been the special subject of our inquiry, I realize there is still much hard work to be done. The problems presented are most intricate, and I believe that little real advance will ever be made in them by theorizing or speculation.

The *x*-ray played a considerable part in my earlier study. With Dr. Henry Hulst,[8] under the bismuth meal and the *x*-ray method, I studied some forty or fifty women; and, although perhaps this feature of the work was not exhaustive, it served to establish definitely the relationship of body form to the prolapse of the viscera and to revolutionize our ideas as to the position and form of the stomach and intestines. In an earlier publication[9] are given the results of the *x*-ray examinations we had made up to that time and I have not materially changed my ideas since then.

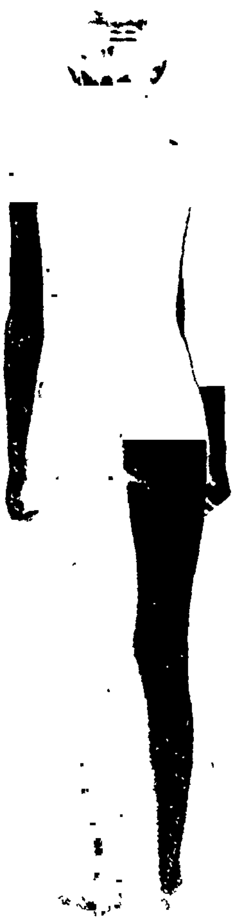

Fig. 5.—Typical enteroptotic figure of adult form in child of 12 years of age. Very poorly nourished, muscular insufficiencies well marked. Height 152 cm. (4 ft., 11½ in.), weight 73 lbs. (73!), thorax depth 14½ cm., waist breadth 17 cm., index 85. Right kidney palpable, lower pole of stomach ½ in. below umbilicus. Frail nervous child, otherwise in good health. (Left kidney had been recently removed for injury.) Note slenderness of form, lack of adipose tissue, small slender muscles and small thorax.

From early observations I soon learned that the two terms "congenital" and "acquired," as belonging to the two supposed types of enteroptosis, were far from satisfying: the one varies from the other not only in the matter of etiology but in many other of its manifestations. The division, I believe, is apt to convey a wrong impression. I wish to discuss the acquired form briefly a little later and in its place, but for the present and for clearness it would seem best that it be put aside and that we deal simply with the true or essential condition.

It may be well first to give a brief description of the enteroptotic woman (Figs. 1, 2, 3, 4.) The first impression one gets of such a woman is that of frailness, expressed in the contour of her form and often in her features. She is slender and has but little adipose tissue; her form is angular; her muscles are thin; there is almost invariably a perceptible laxness and softness of her tissues. She impresses one as being underdeveloped and lacking in vigor. These may be designated as fundamental characteristics. Associated with and largely dependent on these characteristics, one notes in such an individual that the neck is long, the chest undersized and showing distinct signs of collapse; that is, it is shallow, the upper ribs far apart, the lower ones slanting downward and inward and lying close together, and there is a distinct lessening of the capacity of the thoracic abdomen. The abdominal muscles are soft and lack resistance (muscular insufficiency) and there is a tendency for them to bulge forward. This bulging is rarely present to any marked extent in the nullipari and in a large number of cases it is practically lacking altogether. In the parous woman it is oftener present.[10]

The changes in the chest and upper abdomen above noted take place, largely at least, during the growth of the child to maturity—they are the permanent changes; at least, they are the most difficult of any material correction. These women are peculiarly apt to suffer from muscular insufficiency. We see it very apparent in the lessening of the lumbar lordosis, in the rounding back, the forward droop of the shoulders and, not infrequently, in weak-foot. The last-named important changes in body configuration, due to muscular insufficiencies, are by no means always conspicuously present and are to be looked on, generally speaking, as signs of fatigue. They are less permanent in character and are frequently materially bettered as the woman improves in health. I have not been able to note any marked differ-

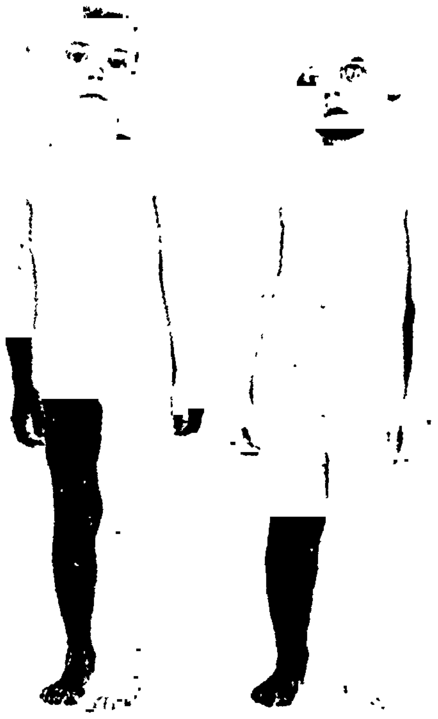

Fig. 6.—Figures of children, each 5 years of age. The one is frailer, less vigorous, less well muscled, less fat than the other. Shown to illustrate the type which we find in the history of the enteroptotic woman.

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[8] Hulst, H.: Skiagraphy of the Stomach and Intestines, Physician and Surgeon, Detroit and Ann Arbor, 1905, xxvii, 391.

[9] Smith, R. R.: Enteroptosis, with Special Reference to the Body Form: The Mechanical Conditions Governing the Abdominal Organs and the Use of the X-ray in Demonstrating Stomach and Intestines, Surg., Gynec. and Obst., 1906, iii, 130 (discussion).

[10] The popular close association between enteroptosis and the size of the abdomen must be somewhat modified. The most marked prolapse often occurs in an abdomen that is nearly flat, and a bulging abdomen often encloses organs fairly well in place.

ence in the height of these women, although Mathes speaks of them as undersized and Albu as taller than others. One sees them short or tall, as are the more vigorous ones. In weight they are decidedly lacking, owing to the want of adipose tissue and the slenderness of other body structures.

In forming an estimate of the degree of body abnormality, I have laid some little dependence on the depth of the thorax (measured with pelvimeter from lower end of sternum directly to back). In doing so the height of the individual must always be taken into consideration. The depth ran from 13 to 17 cm. in enteroptotic women and from 16 to 20 cm. in the more vigorous ones. The relative capacity of the upper abdomen was obtained by securing the measurement above mentioned and combining it with the width of the waist. The index of Becher and Lenhoff, obtained by dividing the jugulo-pubic distance by the circumference of the waist and multiplying the result by 100, is also of much value in making this estimate. The higher the index the smaller the capacity of the thoracic abdomen and *vice versa*. The size and form of the thorax and abdomen as seen and estimated externally will indicate closely the position of the abdominal viscera. One should note also the amount of adipose tissue in and about the abdomen, the condition of the body musculature and the retentive powers of the anterior abdominal wall. With these noted and with a little experience one may determine very closely the position of the viscera as a whole. One will find the prolapse of this or that organ sometimes varying considerablly in relation to that of others, and he must not expect to make such estimates with mathematical exactness, but it is nevertheless true that the position of the viscera, as determined by palpation, percussion or the *x*-ray, corresponds very closely indeed to the outward signs above noted. The downward slant of the lower ribs and the epigastric angle (formed by the edge of the ribs, its apex being the lower end of the sternum) are useful and convenient signs in determining the collapse of the thorax and the size of the upper abdomen.[11]

In making a general estimate of the individual, however, relative to the enteroptotic habit, no one sign or condition should be entirely relied upon. It is practical to consider the amount of adipose tissue present, the condition of the musculature, the size and depth of the thorax, the size of the thoracic abdomen, the position of the viscera and perhaps, above all, the stability of the nervous system and any signs of its failure in normal function.

In speaking of enteroptosis one must distinguish clearly between the physical condition and the symptoms which the enteroptotic woman frequently develops. It must be recognized definitely that enteroptosis and good health, as we ordinarily speak of it, are not necessarily incompatible. We see

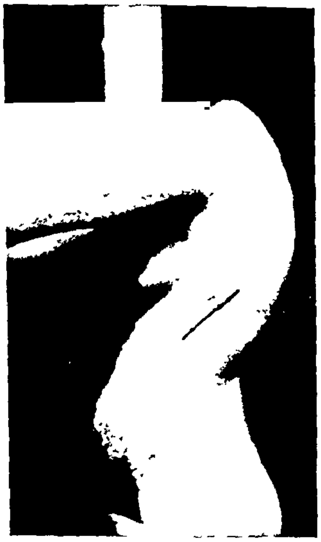

Fig. 7

Fig. 8

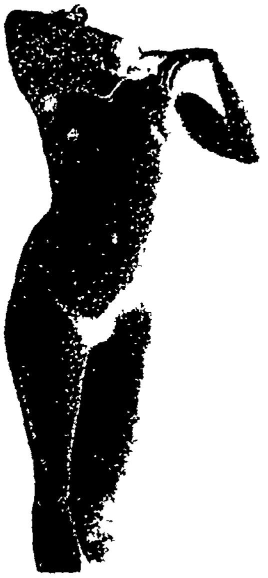

Fig. 9

Fig. 7.—Typical enteroptotic figure of the so-called acquired form, fairly well-nourished, muscular insufficiency well-marked. Thorax depth 17.5 cm., breadth of waist 22 cm., index 75. Right kidney palpable, lower pole of stomach above umbilicus (gas method). Marked digestive disturbance, pain in right side, neurasthenia. Note good size of thorax, low index, bulging anterior abdominal walls and rounding back (muscular insufficiency).

Fig. 8.—Statue of Venus de Milo. An ideal figure in Greek art, illustrating perfection in development and vigor. Note the muscular development, the large deep thorax, the capacious middle zone of the trunk. One finds that women approaching this ideal have organs in normal position. Compare with enteroptotic figures.

Fig 9.—Picture from Stratz. Figure of a vigorous woman, the opposite of the enteroptotic one Note well-nourished body, with sufficient adipose tissue, also the size and depth of thorax. The waist is large, corresponding to capacious upper abdomen.

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11. As to the mechanical conditions producing prolapse, we note in such women certain conditions present: First, the lack of fat, which diminishes the volume of the abdominal contents and changes the contour of its cavity; second, the marked diminution in the size of the thoracic abdomen; and third, a laxness or hypotonus of the tissues of all the abdominal walls. The diminution in the size of the upper abdomen seems unquestionably due to a lack of usual strength or tone in the semirigid walls—call it muscular insufficiency if you will. The diminution in size becomes in turn a factor in the visceral prolapse. I may not here discuss the individual organs; suffice it to say the prolapse of each is evidently modified by the strength and mechanism of the structures which limit its motion. They are variously affected by the conditions named above. This matter of the mechanical cause is one about which there has been a great deal of speculation and little exact experiment or observation and I hesitate to enter into it. The factors I have mentioned seem to me, after a considerable study of the subject, those primarily concerned when considering mechanical causes and which I think must be fully considered in any argument on this phase of the subject. I should like to go into the many other theories advanced if time permitted.

constantly about us women of the most marked type who are in excellent health in the usual meaning of the term. They feel well, are free of pain and are able to take their places in society. As a class, however, they show less resistance to the strains of life than more vigorous women. Overwork, care and responsibility, indoor living, frequent child-bearing and poor food all bring enteroptotic women quickly to a state of fatigue, a lowered state of nutrition and an abnormal mental condition. With a few of them—the most exaggerated ones—the symptoms seem permanent and impossible of material alleviation. With many others the line between a satisfactory equilibrium and the existence of symptoms is narrow; the slightest strain is sufficient to disturb it. The symptoms that an enteroptotic woman develops are fairly well defined—pain in the back and groins, a feeling of weight and bearing down in the lower abdomen, disturbances of digestion, menstruation and urination, and a long series of disturbances psychoneurotic in character. It may, in fact, be said that the enteroptotic woman, when once her equilibrium is disturbed, develops symptoms principally neurasthenic in character. Perhaps, however, they should not all be classified as such. The pain above referred to should, I believe, be ascribed largely to the muscular fatigue and, occasionally perhaps, to the strains and secondary phenomena which a faulty attitude induces.

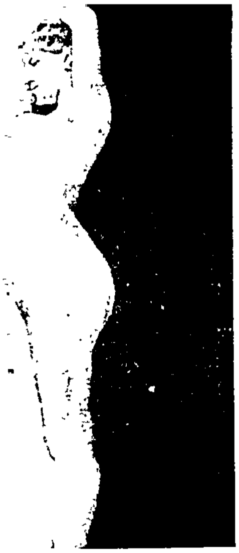

Fig. 10.—Picture from Stratz Figure of vigorous woman. Note the well-developed, well-nourished, muscular body, also the lumbar lordosis and size of the thorax.

In the study of enteroptotic women one early asks the question as to what part the prolapse of the organs themselves plays in the symptomatology; it is not uncommonly assumed that they are directly responsible for the pain, nervousness, disturbed function and ill health of the woman who has them. Here is a mechanical defect —what more simple than that it should cause the woman's symptoms? That this hardly reflects the truth is easy to determine. If we analyze the matter we find that, associated with visceral prolapse, we have first disturbances of digestion and, second, a feeling of weight and bearing down. In a large percentage of our cases at least, disturbances of function have plainly followed exhausting influences and are, I believe, to be regarded as symptoms of them. Although such disturbances occur very frequently in enteroptosis, they are of the same general variety as those seen in other neurasthenic women. Nervous exhaustion is, I believe, the immediate cause of the disturbed function; at least, in most instances, and I have found it to correspond to such exhaustion rather than to the degree of prolapse. It is not, I am convinced, due in the vast majority of instances to any mechanical obstruction—for example, the inability of the prolapsed stomach to evacuate itself because its lower pole lies low in the abdomen, or of a colon to evacuate itself simply because of its position. One frequently sees women with stomach and bowels prolapsed to a marked degree whose digestions are to all appearances good. The x-ray ordinarily shows no definite signs that may be safely interpreted as mechanical obstructions of the alimentary canal, nor does examination at operation show hypertrophy or dilatation, such as one would expect as the result of such obstruction. It is, however, perfectly possible that certain secondary changes may take place in such a colon as may cause abnormal function, but this I believe is not the rule.

The prolapsed organs do not ordinarily cause the pain referred to above. In a state of exhaustion it is common for the enteroptotic woman to have pain which is usually assumed to be caused by a dragging of the viscera on their attachments. The thought lies near that the pain is due rather to an insufficiency of the trunk muscles. This is one of the points in the study that will bear further investigation. Mere expression of opinion cannot, of course, decide it.

In a study as to the cause of prolapse one naturally asks the question when in the life of the individual it began. I have questioned some 300 women carefully in regard to the state of their nutrition and health during childhood and, although it would be almost impossible to classify satisfactorily the answers obtained, I have gathered from them certain facts. The enteroptotic woman of pronounced degree may always trace certain primary characteristics—namely, the lack of nutrition and vigor—to her childhood (Figs. 5 and 6). It is unquestionably a fact, then, that the frail, thin, weakly girls, who remain so during much or all of their childhood, become later enteroptotic women. In a vast majority of cases the anomaly may be traced with directness to a similar bodily condition in her immediate progenitors; that is, there is here a fixed hereditary factor of considerable moment, and we believe that this factor is of the utmost importance, not only in the matter of cause but also in prognosis and management. Its universal recognition and correct valuation by the profession is, I believe, of the utmost importance. I have not been able to show that these children are more liable to infectious diseases; nor, except in very rare instances, could their weakness and ill health be traced to any one illness. It has been my experience that the child who is naturally vigorous and lives in ordinarily hygienic surroundings regains rapidly his usual state of vigor following any temporarily depressing influence, such as acute disease; and I believe that such diseases cannot be said to be a marked factor in the establishment of the enteroptotic habit. I believe, however, that long-continued bad hygiene or chronic diseases affecting the nutrition may be determining factors in early life in its establishment, but this, in my experience, has been exceptional. As a result of failure to recognize the hereditary fundamental constitutional tendencies, efforts have not been uncommonly directed to the relief of local symptoms as if they existed independently. I believe also that bad hygiene has a marked influence on inherited frailness and, conversely, that the best of hygiene may considerably modify its tendencies.

If one questions as to the extent of the prolapse itself during childhood, one must admit that but few exact observations have been made along this line. Butler, of Chicago, in a carefully prepared and excellent paper, read in the Section on Diseases of Children, has examined some 155 children. I have, myself, entered enough into the study to show how different the mechanical conditions are and how little one may depend on the signs on which one is accustomed to rely in the adult. Butler has shown, however, that the fundamental characteristics of the enteroptotic habit are present in childhood—namely, the lack of nutrition and vigor—and that there is at least some tendency to the peculiar adult configuration of form and a displacement of the organs to be found at or near puberty. He has found that prolapse of stomach and kidneys in early infancy should not be looked on as signs of the enteroptotic habit. No extensive *x*-ray examinations have been made to definitely determine the position of stomach and intestines in infancy and childhood.

What shall we call the congenital factor above mentioned? Noble would frankly call it a degeneration and would class it broadly with those other degenerations well recognized and of greater degree. He is not alone in this opinion. Martin believes that it is an arrest at some point in development from embryo or a reversion to a lower type. Because of the differences of opinion as to what is meant by the term degeneration and for other reasons, I would prefer at present to merely define it in the terms of the phenomena which are exhibited; namely, a tendency to backwardness in physical development, to poor nutrition and an unstable nervous state.

Lack of nutrition and flabbiness of tissues may be said to be the chief underlying mechanical causes of visceral displacement. Later in life child-bearing becomes a factor to be recognized, since it strains the already weak anterior abdominal wall and tends to increase the general laxness of the tissues. In this connection I may speak of the so-called acquired type of enteroptosis (Fig. 7). The woman, however vigorous and well developed during childhood and girlhood, may, through hard work, child-bearing, or other untoward influences, bring about a laxness of tissues and bulging of her abdominal walls; and in such a woman it is not infrequent to find a palpable kidney and other organs downwardly displaced. It must be emphasized, however, that the degree of prolapse of the abdominal viscera in these cases is of much less degree than that found in true enteroptosis. It is common, however, to see the conditions mixed. In the already enteroptotic woman, if the cause above mentioned is added the prolapse is still further increased.

In a physical study of these four or five hundred women I have met women of almost every age, state of nutrition, habit, attitude and body configuration. From the viewpoint of enteroptosis it has served to bring out the fact that enteroptotic women form by no means a sharply defined group by themselves. On the contrary, there is nothing approaching a line of distinction. On rare occasions the physician sees a woman who has an almost ideal physique.[12] Such a woman has a figure closely conforming to the ideal figure of Greek art—a deep, large thorax, a voluminous upper abdomen, tissues firm, muscles well developed and sufficient adipose tissue to round out her angles (Figs. 8, 9, 10). With this ideal at one end of the scale and the markedly enteroptotic woman at the other, one meets all gradations. The women that are commonly called enteroptotic are those in which the anomalies are well developed. As they advance in life many of them gain weight and in this state the fundamental defects in their constitution may be easily overlooked. An inspection of the thorax gives one the quickest hint as to the patient's true constitutional makeup. I have not been able to learn by *x*-ray evidence the effect of a gain in weight on the visceral prolapse but I believe it to be a considerable one for the better.

I have purposely left much to be considered by others. My idea here has been to give, if I could, a broad estimate of the subject in general, based largely on my individual study. Much remains to be done. The profession is slowly establishing a substantial basis for the more practical and useful problems that are to be met and dealt with. A clear recognition of the defects that these women have to contend with—their tendencies, the real nature of their symptoms and, above all, the early history of their lives—I hope, will lead to an intelligent management during childhood and more intelligently directed efforts later on.

Wonderly Building.

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[12] It must be understood that a large percentage of the women who come to the gynecologist are of less than the average vigor and that it is probable that a large number of ideal or nearly ideal women could be found in any community.

SURGICAL ASPECTS OF ENTEROPTOSIS *

A. J. OCHSNER, M.D., LL.D
Surgeon-in-Chief of Augustana Hospital and St. Mary's Hospital; Professor of Clinical Surgery in the Medical Department of the University of Illinois, Chicago
CHICAGO

In order to obtain a useful and practical view of the surgical aspects of enteroptosis it seems important to refer at the outset to the causation and development and incidentally to prophylaxis.

Since enteroptosis as a definite condition was brought forcibly to the attention of clinicians by Glénard a quarter of a century ago, many careful observers have been convinced of the fact that patients who suffer from marked enteroptosis are as a rule congenitally deficient anatomically and that their deficiencies are constantly exaggerated during childhood and more especially in females during the increased physical and physiologic burdens of childbearing.

Four years ago, R. R. Smith[1] directed our attention to enteroptosis with special reference to body form; and recently Reynolds and Lovett have shown that the condition occurs in persons of peculiar postures whose bodies are not normally balanced when they are in the erect position. Round-shouldered patients with hollow backs, large pelves and small chests are especially well formed for the development of enteroptosis. This naturally suggests an important field for prophylaxis through careful orthopedic treatment, especially of young women and children. Reed and Robinson[2] have observed gastroptosis in 37.6 per cent. of the tuberculous patients they had an opportunity to examine in a sanitarium.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Smith, R. R.: Tr. Am. Gynec. Soc., Philadelphia, 1906.

[2] Reed, Boardman, Robinson and Neal, Frank: South. California Pract., November, 1908.

Personally I have observed a very large number of children under the age of 12 who came under my care for the treatment of hernia produced from excessive intra-abdominal pressure in whom there was a marked degree of enteroptosis with diastasis of the recti muscles and pendulous abdomen.

The abnormal intra-abdominal pressure in these cases was due to one or more of the following causes: (a) digestive disturbances with gaseous distention of the stomach and intestines; (b) constipation; (c) phimosis with obstruction of the passage of urine; (d) chronic coughs complicating one or the other of the above conditions; (e) chronic appendicitis; (f) severe straining during the act of crying usually caused by pain due to one or more of the above conditions.

In these cases I have found that by removing the cause of the increased intra-abdominal pressure not only was it possible to cure the hernia without operation but the enteroptosis improved greatly in all cases and was entirely cured in many.

The intestines, no longer being overdistended, were able to contract to a normal size; the reduction in the amount of intestinal contents undoubtedly permitted the elongated mesentery to contract into its normal length; and the muscles of the abdominal wall were able to shorten and thicken and to hold the abdominal contents in their normal relation above instead of in front of the pelvis, especially when the treatment was instituted early enough to permit the diastasis of the recti muscles to disappear.

Aside from relieving the abnormal intra-abdominal pressure in these children, more especially by the regulation of time of feeding and quality of food and by this and other means overcoming constipation, their habits of rest were regulated so that they retired to their beds at 6. The foot of the bed was elevated so as to make an angle of 15 to 30 degrees between the planes of the bed and the floor. This virtually placed the patient during the hours of rest in the Trendelenburg position in order to force the abdominal viscera to gravitate toward the diaphragm, which enabled all of the supporting structures to recover from the strain to which they had been exposed by the abnormal intra-abdominal pressure.

The obstetrician has accepted his share of the prophylaxis and the orthopedist is at the present time eagerly searching out his share in this work. We must now ask the pediatrician and the dietitian to take their respective shares in reducing the number of these cases; then, after the gynecologist has disposed of those belonging to his especial field, the remaining cases must be viewed by the surgeon in a most critical way from several standpoints.

In the first place, in a vast majority of patients with enteroptosis this condition does not materially affect the disease from which the patient is suffering; and, in the second place, in a vast majority of patients in whom the presence of enteroptosis does affect or cause the disease from which they suffer, surgical treatment either fails altogether in producing relief or it introduces other conditions incidentally which in themselves cause abnormal conditions worse than those from which relief is sought.

Joseph Blake gives as an indication for operation the following conditions: First, it must be determined that the patient's suffering is due to enteroptosis; second, it must be clear that the condition cannot be relieved without surgical interference; and third, it must be reasonably certain that the condition can actually be relieved by a surgical operation.

It seems that enteroptosis is the cause only in cases in which its presence produces obstruction. The obstruction may be caused simply by a more or less marked angulation, or even by torsion, especially if the enteroptosis is complicated with adhesions. A stomach whose ability to empty itself in the normal period of time has not been impaired should never be operated on for enteroptosis. If the latter condition causes obstruction of the pylorus surgical treatment should be considered; consequently the presence of gastroptosis in itself should never be considered an indication for surgical treatment. The same is true of nephroptosis. In the examination of a large number of foreign-born working women I was able to confirm the statement of Pavlick that 75 per cent. of the women of this class who have repeatedly borne children have right-sided nephroptosis; but I have also found that this condition is of no importance unless it gives rise to obstruction of the ureter and overdistention of the pelvis, a condition which is usually due to an abnormal arrangement of the bloodvessels of the kidney. In most cases it is possible to demonstrate the acute bending of the ureter over the abnormally placed vessel. But the number of these cases is very small in comparison with the number of cases of nephroptosis.

There is also a small class of patients in whom the nephroptosis interferes with the circulation of the kidney giving rise to albuminuria. In these cases nephrorrhaphy is also indicated.

Enteroptosis of the small intestines is still less important unless complicated with adhesions which may be simply a complication or in other cases these adhesions may be partly responsible for the enteroptosis.

The splenic and hepatic flexures of the colon are the only portions of that organ that are rarely involved in enteroptosis; the cecum, transverse and descending colon and the sigmoid flexure may be found at any level of the abdominal cavity. This is probably due in most cases to faulty fetal development, as shown by Babcock and others. Whenever the malposition of this organ is sufficient to cause so much obstruction to the passage of feces as to impair the patient's health because of the resultant malnutrition or auto-intoxication, the operation introduced by Mr. Lane for the removal of the offending portion of the colon is undoubtedly the most rational form of treatment, but in this country this operation is but rarely indicated, primarily because the habits of Americans preclude the conditions of fecal accumulation encountered in so many patients of the lower classes in some European cities. In the greatly exaggerated conditions encountered in Hirschsprung's disease, excision is of course invariably indicated, preferably by the simple method described by Judd.[3]

In our clinic we find ptosis of the transverse colon in more than 25 per cent. of patients operated on for other conditions in whom this condition has no relation to the disease of the patient and is undoubtedly either congenital or due to abnormal intra-abdominal pressure during childhood.

In case of obstruction to the ureter due to nephroptosis nephrorrhaphy is indicated by one or the other of several efficient methods which have been thoroughly tried. In gastroptosis, causing pyloric obstruction the operation for supporting the stomach introduced by Beyea[4] is indicated, because, while it overcomes the mechanical difficulty in the case, it does not fix the organ. All operations which serve to fix intra-abdominal organs for the relief of enteroptosis are bad because they introduce a condition resulting in much more harm than is done by the enteroptosis itself. The intra-abdominal organs are normally in a floating condition which insures comfort to the patient and protects these organs against jarring, hence the necessity of maintaining this condition.

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[3] Judd, E. S.: Journal-Lancet, Jan. 1, 1909, St. Paul, Minn.

The relief of the condition of ptosis of the pelvic organs has been thoroughly studied and described by those interested, especially in the field of gynecology.

Here also the fixation of organs has been wisely condemned. One condition should be mentioned here because it is constantly encountered both by the surgeon and by the gynecologist, I refer to the pendulous abdomen which Quincke[5] discussed fully in connection with all forms of enteroptosis. When present in connection with umbilical hernia it should be relieved by a very extensive sliding of transverse flaps introduced by W. J. Mayo for the treatment of umbilical hernia. When no umbilical hernia is present, then we should employ the method of overcoming the diastasis of the recti muscles introduced by Clarence Webster, consisting in laying bare the rectus abdominus muscle on either side of a median incision by laying open the fascia and then suturing all of the layers successively securing union between the internal edges of the recti muscles. In all cases, no matter what the condition may be, for which the patient has been subjected to an abdominal section in which enteroptosis and diastasis of the recti muscles are present, this operation is indicated.

The important point about this operation comes from the fact that it corrects the vertical relation of the intra-abdominal viscera to the pelvis, placing them above instead of in front of the pelvis.

We still have to account for a ptosis of liver, gallbladder, urinary bladder and spleen.

In a moderate degree of ptosis of the liver relief can be obtained by making a longitudinal incision parallel with the right rectus abdominis muscle and splitting this muscle longitudinally for a distance of 5 cm. downward from the last rib and then suturing the gall-bladder to the edge of the wound, the sutures grasping peritoneum and transversalis fascia. The gall-bladder should be opened and drained for two or three weeks, which will usually result in a marked decrease in the size of the liver.

The same operation gives relief in patients suffering from ptosis of the gall-bladder, which is frequently accompanied with an accumulation of thick, viscid sandy bile or gall-stones in the gall-bladder with more or less obstruction of the cystic duct. These patients should cease wearing corsets and should wear their skirts suspended from their shoulders in order to remove the abdominal pressure from these sources.

In extreme cases of ptosis of the liver the anterior surface should be roughened by friction with dry gauze and a number of chromic catgut sutures should be used to unite the anterior surface of the liver with the parietal peritoneum. The fixation thus obtained is not nearly so satisfactory as the support obtained by the cholecystorrhaphy in the milder cases.

In ptosis of the spleen operation is indicated only when there is obstruction due to extreme mobility of the organ suspended by a long pedicle. A pocket may be formed of the peritoneum into which the loose spleen is fastened. I have removed the spleen in such cases, but the experience in either of these operations is too small to be valuable.

In all cases of enteroptosis, dietetic and hygienic measures must be employed in the after-treatment in order to eliminate as far as possible, abnormal intra-abdominal pressure from every source, but especially from gaseous distention and constipation.

2106 Sedgwick Street.

ENTEROPTOSIS—THE PHYSICIAN'S VIEWPOINT *

J. H. MUSSER, M.D.
PHILADELPHIA

It is possible that there has been an exaggeration of the importance of congenital gastroenteroptosis as a factor in the production of symptoms. Investigations by modern methods, as the *x*-ray, *show that this ptosis* is of frequent occurrence when not suspected. The individual is without symptoms unless some complication, as an inflammatory lesion, arises. Independently of such *complication, if symptoms are present, they* can be demonstrated to be due to other factors. These factors of ill health in the large proportion of cases are the result of antagonistic environmental conditions, which in an individual handicapped by congenital insufficiencies, are not met by healthful reactions of the organism. In consequence the organism is overwhelmed. The environmental conditions are those which make for effeminacy in our life. Modern types of living, overstimulation of the nervous system by all forms of excitement, improper diet, foolish amusements, excesses and irregularities of all kinds are the factors productive of symptoms in gastroenteroptosis. This view seems to be supported by the fact that the laboring classes are not often victims of that symptom-complex of general and visceral neuroses, which is so common in the leisure classes. It may also be said that the victims of the neuroses with enteroptosis are usually members of a family in a period of involution. They are luckless survivors of a family about to become extinct. They may have stigmata of degeneracy and are almost sure to have the type of thorax known as the phthisical or paralytic. If one traces the morphology of antecedent generations, it can be seen that with each generation there is structural evidences of physical decline.

Moreover, one is supported by the clinical evidence and by the results of treatment in the view that the enteroptosis is only part of a general condition, and is not of itself sufficient to give rise to symptoms. Through the clinical evidence we learn that the morphologic condition and the clinical expression of any gastroenteric insufficiency is seen in the statement that from childhood there has been poor health and that abdominal symptoms always obtain. Thus, in one hundred cases of gastroenteroptosis taken without selection from more than six hundred cases, and not divided into congenital and acquired, the evidence is strong that 37 per cent. had always been in poor health, while 27 per cent. had presented symptoms from a time when the strain of evolution was a factor added to the congenital condition.

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[4] Beyea, Henry D.: Am. Med., Oct. 8, 1904.
[5] Quincke, H.: Therap. d. Gegenw., 1905, xlvi, 10.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Unfortunately, the history does not record the general conformation of the individual, which enables one to predict ptosis, and which prediction is almost always confirmed by exhaustive examination.

The results of the treatment or management of such cases lend further support to my view. I have in mind many individuals with gastroenteroptosis in childhood who, notwithstanding that they often were of involution family groups, escaped the many perilous ills familiar to us as belonging to this period, because of favorable environmental conditions. They had the advantage of a robust sensible home life and of conscientious, wise mothers. They had every environmental agency that makes for health, a rational education and normal amusements. Some of the girls have grown under my eye to be healthy mothers of families, and the boys to be wise dispensers of their strength, which has made them normal members of a community, though not overbearing because of their powers as athletes.

Finally, I may state that I have made metabolic analyses in ten of these cases of enteroptosis without finding any important evidence of malnutrition or perverted nutrition or of a toxemia which could fairly be attributed to an uncomplicated enteroptosis. Furthermore, I can state, although with some qualification, that whatever indications of toxemia I have found in such cases as indicanuria or alteration in the proportion of the sulphates, or of changes in the feces indicating fermentation, etc., such modifications can be ascribed by the neurosis which accompanies the congenital insufficiencies.

In short, with such a congenital morphologic condition, there is also a state of the nervous system attended by visceral hyperesthesia which if not carefully guarded against brings with it a state of introspection, the ensemble of which is typical of the neurosis of enteroptosis. Any attempt, therefore, to relieve such conditions must be directed not to any one part of the organism but to the organism as a whole. Any attempt which will render one part of the organism more hyperesthetic, as will operative procedures, will increase the neurosis, and delay recovery temporarily or even permanently.

If, then, we must not allow ourselves to consider enteroptosis as a single factor, what can be done to relieve any symptoms to which it apparently gives rise? I take it that we agree that such symptoms are the result of secretory neuroses, gastric and intestinal, and motor insufficiency with secondary toxemia. Let us inquire into the defenses and adaptive powers which the organism possesses, provided the individual listens to the responses of the organism as seen in the reactions it manifests. Unfortunately we are brought face to face with the problem long after the organism has become oblivious of these responses, when the reactions are negative features. Indeed it is the ever-watchful eye of the mother in the early periods of the child's life that usually detects them, and if bridge and teas and other diversions of our vaunted modern life do not distract her from her duties, she controls the reactions, represses them when in excess, stimulates them when deficient and carefully guides the child into normal adolescence and healthy manhood or womanhood.

The defenses the organism possesses against such insufficiencies are only those which conserve health. If watched for it can readily be seen that such an individual has limitations which must not be disregarded. The so-called bilious attacks, the attacks of exhaustion, of headache, of nervousness, the various neurasthenic and hysteric phenomena are expressions of fatigue of an organism which cannot mark time. The defenses of the organism are rest and temporary abstinence or moderation in all things. If these efforts of the organism are not frustrated by an ambition along the social or educational lines these defenses will be rationally encouraged. They will not be thwarted by the stimulants used to goad tired Nature and by narcotics, both of which it is true are likewise more in vogue later in life, establishing before long a vicious circle and reducing the organism to a state in which its existence depends on artificial conditions. In short, we must combat not only the congenital insufficiency, but also the fatigue neurosis which attends it.

It is not only by the defenses of rest (physical, mental and emotional), that we see the organism meet the insufficiency of its powers, but by adaptation also. This is seen in the development of a tolerance to any intoxication (an exaggerated factor, however, I believe), in the occurrence of hypertrophies to overcome obstructive lesions, and of secretory balance to mitigate any aberration in that line. If the organism has half a chance the chemical correlations and internal secretions will take care of the insufficiencies.

It will be asked if the organism has even a modicum of defense and adaptation, why it is necessary to invoke the aid of the physician. The answer is that the defensive and adaptive powers have not been heeded and that every excitation or irritability which arises from weakness of the organism invites excesses beyond the power of the organism. The individual does not live down to his strength but spends both income and capital to the verge of bankruptcy.

Inasmuch as failures of defense occur, as seen in women after nervous strain or after childbirth with its accompanying anatomic and physiologic changes, and in growing males after misguided athletic endeavors, or in still more vicious effeminacy and stimulation of the adolescent period, what can be done to aid the organism? Aid it needs, and in any attempt to assist we must realize that not only is the organism handicapped, but the symptom-complex indicates that the organism as a whole, its vital powers and environmental conditions, play a large, if not the most important part in the production of symptoms. It must be realized that it is not a disease but a condition which confronts us. It is one thing to manage a condition and another to treat a disease. The former requires all the resources we may have at our command along lines of physiologic therapeutics; the latter requires us safely to conduct the organism to health by methods of antagonism, neutralization, counteraction, destruction, direction and assistance, which are physiologic and pathologic. Above all, the former requires the wholesome tonic influence of a robust personality in the physician and other individuals associated with the patient. It is not for me to present a homily on hygiene. I may be permitted, however, to urge that the general principles and methods of hygiene should be invoked and applied in directions specifically suitable to the individual patient; that to this must be added an indirect therapy based on a correct estimate of the functional value of each organ or system. That it is necessary to treat the eyes, the muscular system, correct postural defects, and all the organs requiring it, goes without saying.

It is evident that there is no specific, and it is likewise evident that no insults to the nervous system are to be permitted by injudicious surgical procedures. A little relief can often be obtained perhaps psychically, but also physically by the use of a bandage. A notable result by such treatment was seen in some of the one hundred cases previously mentioned. A bandage was ordered for nineteen patients in whom the history indicated a congenital origin; five were much relieved, ten a little relieved and four experienced no relief. About 25 per cent. thought it worth while to wear a bandage. Drugs may be employed, as iron, nux vomica, physostigmin, and also laxatives, of which the most effective is rhubarb. Now and then sedatives of mild form, as the bromids, sumbul and valerian, may be judiciously employed.

We must pause a moment to consider the congenital visceroptosis, on which acquired physical conditions are engrafted, which lead to obstructive symptoms, chronic constipation and its secondary disorders. A different condition confronts us. Hence the judicious surgeon or internist must estimate the relative effect on the organism of operative procedure, and of a continuance of the abnormal conditions. I am free to admit that the presence of inflammatory adhesions, of undue dilatation or of obstruction, demands the intervention of the surgeon.

Here also a word may be said of the patients with visceroptosis who cannot have the opportunities of hygienic treatment which I have spoken of. Such are unable to carry on their usual avocations and are practically helpless; for them a chance must be taken, and it may be wise to resort to surgical procedure.

The acquired visceroptoses are most amenable to surgical treatment. If judicious abdominal support, the repair of losses of external support and indirect and hygienic therapeutics are not of avail, resort to surgical procedure is necessary.

What I have said regarding operative procedure in congenital ptoses may have to be qualified with the turn of a night. The argument that the enteroptosis should not be treated by surgical measures because other congenital states exist, and notably those of the nervous system, might be applied to other congenital conditions. It might be said for similar reasons that one should not operate on hare lip or cleft palate. If we could recognize congenital ptoses early and before the neuroses develop we might be able to forestall the ill effects of insufficiencies. Who knows but that in the near future such early recognition will be possible, and early remedial surgical relief applied?

1927 Chestnut Street.

THE *X*-RAY DIAGNOSIS OF ENTEROPTOSIS *

EDWARD HOLMAN SKINNER, M.D.
KANSAS CITY, MO.

The *x*-ray diagnosis of enteroptosis is at once a simple procedure with definite conclusiveness. The *x*-ray furnishes a method to determine with exactness the position of the large and small bowel within the abdominal cavity.

This examination does not demand an *x*-ray equipment above the average. A 12-inch coil, with electrolytic interrupter and a tube capable of standing a primary current of 20 amperes for thirty seconds will suffice.

On account of the comparatively equal densities of the abdominal contents, it is necessary to render the colon transparent or opaque in outline. The following means may be used to adapt the colon to Roentgen examination:

1. Inflation with air, per rectum. This method is not satisfactory because the air-pressure within the colon is unequal, and, further, does not give an exact record of the lumen of the colon on the fluoroscopic screen or negative.

2. The distention of the colon with opaque emulsions, injected per rectum. Distention by injected emulsions produces a colonic distention with uniform filling pressure when properly conducted.

The technic of the rectal injection is as follows: The patient, having had an intestinal cleansing previously, is placed at ease on the left side, with hips elevated. There should be complete relaxation of the abdominal musculature. A soft rubber tube, about one-fourth inch lumen, is inserted, and the emulsion allowed to flow gently, as the first portion of the injecta may produce colonic contractions that would foil our purpose. The pressure of the flow should be about 8 to 20 inches. The injection should require about thirty minutes for 2 quarts of emulsion. The examination within the next hour will disclose the filling of the large intestine to the ileocecal valve. The average capacity of the adult rectal ampulla is 1 pint, and of the large bowel 3 quarts.

3. Distention of the colon with opaque substances ingested with food. By this method the residue of a bismuth meal is radiographed in the colon, sufficient time (usually sixteen to twenty-four hours) having elapsed since its ingestion to insure its presence in the colon.

Opaque substances of radiographic usefulness include, first, the bismuth salts—subnitrate, carbonate, subcarbonate and oxychlorid. Of these, the oxychlorid is best, not having any deleterious effects and not undergoing chemical change. The subnitrate has been discarded because of some unfavorable reports and the care necessary in its selection commercially. Second, the iron preparations, including manganate of iron.

For ingestion by mouth, these opaque substances must be held in suspension by a gruel, or porridge of rice, milk and bread, meal of peas, oatmeal, etc. I myself use about 2 pints of porridge, into which one or two ounces of bismuth oxychlorid is thoroughly mixed, flavored with raspberry syrup or grape-juice.

For an injection per rectum, I use an emulsion of 2 ounces of bismuth oxychlorid in 32 ounces of milk, with 4 drams of acacia to sustain the bismuth, or an emulsion of olive oil and bismuth oxychlorid. It is worse than useless to draw diagnostic conclusions from the injection of simple bismuth in water.

The *x*-ray diagnosis may be made by (1), fluoroscope, or (2), radiograph.

1. The fluoroscope examination should be conducted in a room of absolute darkness, on a good protected fluoroscopic screen of a size (11 by 14 or 16 by 20 inches) sufficient to cover the entire field of inspection. The fluoroscopic outlines of the opaque colon may then be charted on the glass covering to the fluoroscopic screen and this transferred to paper for a permanent record. If the physician or Roentgenologist is provided with fluoroscopic apparatus that protects the patient and operator, this examination may be conducted expeditiously and without the tedious detail of the radiographic exposure. But without good fluoroscopic apparatus, one is confined to a radiographic technic.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

2. The radiographic examination should be made with a plate not less than 11 by 14 inches in size, usually 14 by 17. The plate should be placed with the emulsion surface against the abdomen, the umbilicus having been marked with a copper cent, attached with adhesive, and the tube opposite the fourth lumbar vertebra and at a distance of 20 to 22 inches from the plate. The use of the usual *x*-ray plate will usually give sufficient detail with an exposure of ten to thirty seconds, with a primary current of 20 amperes, through a 12-inch coil and a tube of medium penetration. The topographic outlines of the colon alone being sought, it is quite satisfactory to shorten the exposure and increase the contrast by means of an intensifying screen, especially the new Gehler-Folie or Sinegram screen, which produce negatives relatively free from small flecks.

The interpretation of the radiographic and fluoroscopic shadows is greatly enhanced by study and experience. Before examining by the fluoroscope, the observers should remain in absolute darknesss for ten minutes to secure an ocular accommodation. This is especially advisable to one unfamiliar with fluoroscopic shadows.

The landmarks of our *x*-ray picture are the umbilicus and ensiform cartilage, marked by pieces of metal, and the wings of the ilium. The shadow of the cecum should be within the wing of the right ilium. We may then trace the colon to the hepatic flexure. In a well-filled colon we may see the hepatic angle completely filled with the emulsion, but sometimes the apex of the angle will show some transparency produced by retained air. The splenic flexure is higher than the hepatic, and also shows a sharper angle with air at the apex. The shadow of the transverse colon should be noted in its relation to the umbilicus and its movability noted by direct abdominal manipulation. To determine the movability of the colon in radiographs, it is necessary to take two exposures; one with the patient standing, the second with the patient in the Trendelenburg or prone posture. The study of the movability of the colon and possible adhesions thereto is best accomplished by the fluoroscope.

The hepatic and splenic flexures of the colon may appear sharply angled with possible kinks. This is usually faulty interpretation, as what appears to be an angle is really a curve, the upper portion of the ascending colon being overshadowed by the first part of the transverse; likewise, the first portion of the descending colon may be overshadowed by the distal portion of the transverse colon. If there be a kink that obstructs, there is a damming up of the opaque emulsion on the side from which the emulsion was introduced.

To avoid errors in the estimation of the distance of the transverse colon above or below the umbilicus, it is necessary that the direction of the *x*-ray delivered from the *x*-ray tube strike the fluorescent screen or plate at a perpendicular, and at a point on the back opposite the umbilicus, about the fourth lumbar. In the study of a particular portion of the colon, where adhesions are suspected it is desirable to diaphragm down to the area on the fluorescent screen. This is not necessary in radiographs, as the entire colon may be studied at leisure, but without the advantage of continued observation under manipulation that the fluoroscope affords.

CONCLUSIONS

Having rendered the lumen of the colon opaque, it is possible to record exactly, either by fluoroscope or radiograph, the position of the colon in its relation to the umbilicus and bony skeleton. The fluoroscope will give diagnostic information beyond the radiograph, in that changes in position of the colon, due to manipulations and adhesions, may be studied.

616 Commerce Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. SKINNER, MUSSER, OCHSNER AND SMITH, FORMING A SYMPOSIUM ON ENTEROPTOSIS

Dr. Max Einhorn, New York: I think it was in 1895 or 1896 that my paper on "Movable Kidney and its Treatment," was published in the *Medical Record*. At that time most movable kidneys that were recognized, were operated on, and I think I stood almost alone in the opinion that movable kidneys should not be operated on. It is not movable kidney alone that gives the trouble, but there is usually associated a movable stomach, or liver, or other organ. Such conditions are found more often in women than in men. Whether or not it is congenital is difficult to state. I am of the opinion that in some cases there is congenitally a tendency to develop such anomalies. That such conditions exist in normally developed children, who later develop affections that lead to enteroptosis, we have ample proof in the fact that proper treatment brings permanent cure. If the condition existed from birth this would not be so. Another point is that a strict diet is just the opposite to what is required. In all these patients, unless there is a strong contraindication, it is important to make them eat. The patient may tell you that he cannot eat eggs. If you will allow this to guide you, you will never succeed. Tell your patient to eat a little at a time, and that in two or three weeks he will find he can eat everything, and that is the only way to cure such patients.

I do not think that enteroptosis as such gives rise to great disturbance of the motility of the stomach. If you find food in the stomach in the morning with a prolapsed condition, the prolapse is not the cause of the stomach not being emptied. There may be some other condition associated. I would say that this is not a phenomenon of enteroptosis.

Dr. R. C. Coffey, Portland, Ore.: It is pleasant to see an afternoon devoted to this subject in a surgical section of the American Medical Association inasmuch as many of the leading surgeons of our country have absolutely opposed surgical treatment of these cases. The first patient whom I treated surgically was one in whom I could find nothing else wrong. The patient had gone from the condition of a strong, healthy woman to a condition of severe vomiting, just as if she had an obstructive ulcer at the pylorus. I had heard of nothing at that time that had been done on the subject. I told the patient's husband what I would like to do in the case and he consented. I sutured the omentum to the abdominal wall.

The patient fully recovered and weighs 160 pounds; she weighed 80 at the time of the operation. Since then I have operated on 22 other patients for ptosis of the stomach. I think Dr. Clark has given us one of the best pieces of advice to-day: not to operate for the pathologic condition as it appears from the clinical examination, but to operate for symptoms alone. I remember that Dr. Clark, some years ago, in a paper advocated this operation in certain cases in which he had incidentally found the stomach low down while doing other abdominal operations. I am glad that he has changed his opinion. We never should operate on the stomach simply because it is low. In but two cases have I operated in which the patient was not an absolute invalid. That is the rule that we should adopt. In only three cases have I operated for general ptosis. Most of my operations have been for prolapse of the stomach alone. Four patients had displaced liver and one or two had displaced kidneys. There were two cases of general ptosis; operation was done in two stages. In one case the patient had been an invalid for five years. The stomach was also prolapsed and the uterus retroverted, as is common in these cases. I anchored the stomach, liver and kidneys, and suspended the uterus at one operation. I found the congenitally narrowed condition which had been mentioned and on attempting to close the abdomen it seemed too small. I had then turned the fascia of the rectus in from above, leaving only the posterior portion of the fascia, thus extending the abdomen at least two inches. Six weeks later, I made two incisions, one on each side midway between the umbilicus and anterior superior spine of the ilium, and parallel to the fibers of the fascia of the external oblique. The fascia was overlapped for two inches on each side, as shown in article in *Surgery, Gynecology and Obstetrics*, thus changing the entire contour of the patient's abdomen. The patient is doing her own work and feels absolutely well. In two other cases I did the same thing.

Dr. C. F. P. Korssell, Chicago: I emphatically believe in the surgical treatment of enteroptosis. I have had some little experience and endorse the view of intra-abdominal pressure being a causative factor of great importance. In seventy-four women and two men operated on for enteroptosis by a new method, sixty-three had previous diagnosis and were deliberately operated on for its relief. Eighteen of them had previously been operated on for gynecological troubles without relief. My work has been in aggravated cases, in patients prostrated, useless, and with life a burden. They have been mostly those complicated with pelvic troubles and in quite a large percentage the small intestines were principally involved, being prolapsed into the lower pelvis below the promontory of the sacrum and bent back around its acute angle, usually with the uterus pressed down, retroverted and the fundus resting on the intestines, compressing them against the sacrum. The operation is done through a transverse or the usual incision, above the symphysis. After raising the intestines and emptying the pelvis completely of intestines, packing them out of the way, an incision is made in the posterior peritoneum about one inch long just to the right of the rectum, either transversely or longitudinally; then grasping the cul-de-sac of Douglas, or, in some cases, the neck of the uterus, well down with a tenaculum forceps and approximating it posteriorly to the sacrum just below the promontory and stitching it into the cut in peritoneum with chromicized catgut or silk, a firm anchorage is secured for the uterus posteriorly and permanent suspension. The same procedure is carried out to the left of the rectum with or without incising the peritoneum. The sutures are continued on each side from these central points of suspension for sewing the broad ligaments on the same level to the sacral peritoneum, a half-inch below the promontory, until the true pelvis is entirely closed up by a diaphragm of double layers of peritoneum, which experience has shown to be of ample strength to keep the abdominal organs out of the pelvis.

I have deferred reporting this work in the hope of having some of these patients come through pregnancy, but have so far waited in vain. However, I do not believe the condition produced would materially interfere or complicate natural labor, especially if one were not in too great haste. Such patients should have ample dilatation of the cervix before resorting to the use of forceps.

Dr. J. H. Carstens, Detroit: Prevention is the great desideratum. The illustrations of Dr. Smith show the peculiar shape of the body, which indicates the tendency toward general abdominal ptosis. This being the case, we should prevent the latter by systematic development of the body by physical exercise and not too much school work. Why do we have so much ptosis and neurasthenia? Because many of the girls at this age are ambitious; they want to learn and to become stenographers, teachers or members of some other profession, and still they haven't the right kind of brain; they learn with difficulty; they must study hard, until late at night. To make matters worse, perhaps some good aunt pays for a music teacher and they also play on the piano during this stage of development, and then when they are 18 or 19 years old graduate from the high or normal school physical wrecks, with a certain amount of mental development and with a sour and cross temper. We must prevent this condition. Such a girl must stop her education for a few years; she can make it up easily afterward, if necessary. Such a girl must be sent to the country. Let her jump over the fences, chase the cows, feed the chickens, fall in the river, swim, row a boat; in other words, be a regular "tom-boy." With plain nourishing food, in the course of a few years she will develop into a strong, healthy woman with a virile body, withe not so much learning, but with a sweet temper.

Dr. A. W. Crane, Kalamazoo: It seems to me that the usefulness of the x-ray examination of the stomach and intestines by surgeons is greatly circumscribed. It is mentioned but little in the books, in journals and in works on the x-ray itself. It does not seem to be described in the books on general surgery and medicine. To my mind the x-ray examination of the stomach and intestines often furnishes more complete information than experimental operation. A surgeon may not be able to tell whether an ulcer of the stomach is present or not, even though he has the stomach in his hand, but he may be able to tell from the x-ray examination that such exists. It seems to me that except in emergency cases, no surgery of the stomach or intestines should be done until x-ray examination had been made.

ARTHRITIS OF GASTRO-INTESTINAL ORIGIN, ITS DIAGNOSIS AND TREATMENT [*]

H. W. MARSHALL, M.D.
BOSTON

An obscure relationship between disorders of the digestive tract and joint affections has long been recognized by clinicians, and in the last decade some of these relations have become better understood. It is now known that severe cases of arthritis may occasionally be completely relieved by preventing absorption of intestinal contents in the large intestine. This may be accomplished by intestinal lavage, purging, regulation of diet, and by operations on the colon that cause fecal material to be discharged through artificial openings, thus putting the lower portion of the intestine entirely out of function.

Various intestinal affections may influence joints, and it is interesting to observe that typhoid fever and bacillary dysentery both are occasionally accompanied by joint lesions, while in appendicitis arthritic complications are too infrequent to seem more than mere coincidences. The few scattering cases of arthritis that occur with rarer diseases of the alimentary tract will be disregarded in this paper.

Keen[1] states that there were 84 cases of arthritis among 1,700 cases of typhoid fever collected by him, and Garrod[2] estimates that 3 or 4 per cent. of bacillary dysentery show joint complications. In the very common malady, appendicitis, Sutherland[3] has been able to collect only 6 cases in which there have been pronounced articular pains, and these seem to be too few to indicate any real relationship. Garrod[2] says that he has been unable to obtain any reliable instances of joint disease occurring with amebic dysentery, but W. E. Musgrave[4] records that chronic rheumatism both of the articular and muscular types is very frequently encountered, and in many instances seems to bear a very definite relation to amebiasis of the intestine. In comparison it should be remembered that gonorrheal arthritis occurs in 2 or 3 per cent. of patients suffering with the latter disease.

The joint lesions in typhoid fever and bacillary dysentery make their appearance after bacterial poisons have acted for several weeks. In practically all instances bacteria have not been found in the joint fluids.

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[*] Bacteriologic examinations by Mr. Carl Ten Broeck and Mr. K. N. Jones, Department of Comparative Pathology, Harvard Medical School.

[1] Keen, W. W.: Surgical Complications and Sequels of Typhoid Fever, 1898.

[2] Garrod, A. E.: Allbutt's System of Medicine, 1908, iii.

[3] Sutherland, G. A.: Edinburgh Hospital Reports, 1895, p. 109.

[4] Musgrave, W. E.: Philippine Jour. Sc., June, 1906, i, No. 5.

In dysentery the arthritis usually subsides within a week or so, and affects the larger joints most commonly, especially the knees, in which there may be synovial effusion sometimes of extreme degree. Generally no permanent damage results.

Typhoid arthritis is sometimes polyarticular, but more commonly monarticular and it especially attacks the hip joint, in which spontaneous dislocation is a very frequent result from serous distention of the capsule due to the subacute synovitis.

CLINICAL DATA INDICATING THAT CONTENTS OF THE LARGE INTESTINE MAY ACT AS JOINT IRRITANTS

Attention will be given in what follows mainly to obscure intestinal toxemias originating in mild processes that are associated only with ordinary non-pathogenic intestinal bacteria.

Vague connections between intestinal disorders and joints have been recognized by many clinicians in the temporary improvements occurring in the latter following treatment of digestive irregularities, but these observations have been too indefinite to permit of reasonable deductions, and dependence therefore has to be placed on fortunate combinations of intestinal and arthritic symptoms that allow of no doubts as to their interpretation. Such cases are, however, rather rare. The following instance of fecal impaction accompanied by joint complications is the most convincing that can be cited at the present time:

Patient.—Married man of 50 years, physician, suffering with multiple arthritis; severe symptoms of several months' duration, preceded by two years of slow development of stiffness; arthritis involved spine, jaws, hands, knees and ankles, especially, and to less extent the other points. Nearly complete disability was present and joints exhibited periarticular swellings and limitation of motion, with edema of skin around affected parts, of moderate degree. Psoriasis was a very interesting feature, having a most extensive distribution over scalp, trunk and extremities and of duration longer than the joint lesions.

Personal History.—Patient was a healthy man previous to present illness; no infections or other etiologic factors discovered to account for insidious onset of joint trouble; tonsils removed without effect on joints; no digestive symptoms except occasional slight abdominal pains at night; patient always a hearty eater.

Examination.—This showed fecal mass in the cecum and tenderness at umbilicus. Bowels were moving once or twice daily with the use of sodium phosphate. Physical examination was otherwise unimportant.

Treatment.—Intestinal lavage, with physiologic saline enemas daily.

Result.—Enormous accumulation of fecal material evacuated at end of eight days. The edema about the joints and psoriasis began to subside slowly within two or three weeks, and the arthritis and skin lesions both steadily improved for several months and terminated in complete recovery that has remained permanent. Patient has continued treatment, taking fermented milk and keeping bowels well evacuated with cathartics and enemas, and has been able to resume active practice and play golf for the past year.

It seems reasonable to suppose in this case that substances were absorbed from the large fecal accumulation adherent to the intestinal walls and that these produced joint and skin lesions, as complete subsidence of two such severe conditions in skin and joints simultaneously after removal of the fecal mass scarcely permits of any other interpretation.

Having acquired this definite conception, it becomes possible to support this idea of intestinal toxemia by additional observations which of themselves seem less convincing.

Colostomies performed for various rectal conditions have been reported by different surgeons[5] to be associated occasionally with the cure of an arthritis which happened to be present coincidentally with the rectal disorder. Interpretation seems to be that while the surgical malady was being cured by allowing the intestine to remain at rest, simultaneously its absorptive function was also thrown into disuse, with the result that the joints were improved.

I have had charge of a patient suffering with rectal ulceration for which a colostomy was performed. In this case the artificial opening allowed a little fecal matter to get into the lower part of the bowel occasionally, and the patient was in the habit of irrigating the colon through the cecal opening himself; moreover, he could readily tell when such washings were needed by pains that began in his joints, and these subsided each time after irrigation, within a few days.

Purgation as a cure for arthritis from intestinal toxemia has been frequently employed at sanatoriums, and the marked improvements that often are related are to be explained on the assumption that they also diminish absorption by clearing the bowel quickly and thoroughly, and by increasing peristalsis. There seems to be no doubt that such improvements occur or that symptoms generally recur after the treatment ceases and accumulation again takes place.

ORIGIN OF INTESTINAL TOXINS

In typhoid fever and bacillary dysentery, toxins presumably are derived from special micro-organisms producing those diseases, but in the class of cases under discussion there have been no pathogenic bacteria recognized in the stools.

Theoretically three possibilities exist. 1. Some specific organism that produces the toxic substance, which has not yet been discovered, is present in the stools. 2. Ordinary non-pathogenic bacteria develop excessively, and the products of their activities exert a mild irritating effect on joint tissues from being in excess in the blood, similarly as excessive quantities of uric acid derivatives cause trouble with joints, although uric acid is a normal product of metabolism. 3. Defective digestion produces abnormal chemical products independently of bacterial action, and not of gouty nature, that are the cause of arthritis.

NON-PATHOGENIC INTESTINAL BACTERIA IN THEIR RELATIONSHIP TO JOINTS, AND CONDITIONS THAT ACCOMPANY THE PRODUCTION OF JOINT LESIONS

Examinations of stools of arthritic patients show no constant characteristics or any peculiarities that are not observed in patients who do not have arthritis. No bacteria have been discovered that are peculiar to this condition alone, yet hidden in this confusing state of affairs lies the cause of certain types of joint disease, shown by cures following removal of fecal impactions.

The relationship between intestinal toxins and joint lesions must depend on the following series of variable conditions, namely: variable formation of toxins, variable absorption of them through the intestinal walls, variable unknown processes in their passage through the liver into the general circulation, and diverse resistances of joint tissues.

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5. Cave, Edward John: A Discussion on the Chronic Diseases Included in the Terms "Chronic Rheumatism," "Osteo-Arthritis," and "Rheumatic Gout," Brit. Med. Jour., Oct. 12, 1901, p. 1040. Wallis, Frederick Charles: The Causes and Treatment of Non-Malignant Stricture of the Rectum, Brit. Med. Jour., Oct. 6, 1900.

Production of toxins fluctuates with the quantity of nitrogenous food and according to the abundance of bacteria, and it may be diminished by changing the character and quantity of diet, by improving digestion and absorption of food in the small intestine, thus leaving less for bacterial decomposition, or by introduction of micro-organisms, as lactic acid bacteria, which inhibit the growth of putrefactive bacteria. The quantity of toxins absorbed depends on the amount formed, the rate of peristalsis, and also on inherent individual differences in powers of absorption. Resistance of joint tissues must also be considered a variable factor, as variability in vital resistance of all living tissues is one of the recognized facts of biology.

EXAMINATIONS OF STOOLS OF ARTHRITIC PATIENTS

Examinations of stools have been made a sufficient number of times from twenty-five patients to form an opinion regarding the presence of unusual species of bacteria, especially spore-forming anaerobes, and to allow comparison with non-arthritic individuals. Some patients were selected because their joint condition seemed to be of intestinal origin and others were chosen because the intestinal tract was thought to be normal and to stand in no relation to the arthritis. Also a few stools were examined from patients who had no joint trouble.

Methods are given below and a summary of results simply outlined at this point.

1. Patients with arthritis who respond to intestinal treatment exhibit luxuriant growths of intestinal bacteria both of the predominant type of *Bacillus coli communis* and also of spore-forming anaerobic bacteria.
2. No new specific pathogenic micro-organisms have been discovered.
3. The very large majority of spore-forming anaerobes correspond to *Bacillus aerogenes capsulatus*.
4. Wide variations exist in numbers of fecal bacteria found in different individuals, also in the same individual at different times; therefore numbers of bacteria present in any selected specimen of stool have slight significance unless excessively large. MacNeal[6] has exhaustively studied fecal bacteria of healthy men and confirms this observation of fluctuation in numbers of fecal micro-organisms.
5. Scanty numbers of fecal bacteria frequently are found in persons with arthritis who respond to intestinal treatment owing to the fact that cultures were taken at a time when fluctuations were at their lowest limit, due to purgation, diet and other treatment.
6. Patients with arthritis of other origins, also non-arthritic individuals, may exhibit all the peculiarities observed in those with arthritis of intestinal etiology, except that excessive numbers of bacteria are less persistently observed.

CONCLUSIONS

1. Patients with arthritis who respond to intestinal treatment habitually eat a little more than their digestive tract is able to properly care for, and intestinal putrefaction occurs with them in consequence very frequently and excessively, yet subject to usual fluctuations.
2. Excessive amounts of bacterial products, derived from activities of ordinary intestinal bacteria, find their way into the blood and produce arthritis in those persons who have susceptible joints, just as excessive amounts of uric acid derivatives in the blood produce joint changes in gouty individuals.
3. The exact identity of bacterial products that produce arthritis is unknown; nor is it understood whether they are derived from many species of bacteria or from some special organism, like spore-forming anaerobic bacteria. The presence of the latter in abundant numbers, and the fact that some of them are known to produce acute poisons, makes their rôle a suspicious one.

Baldwin[7] has studied the products of intestinal putrefaction as they appear in the urine of patients suffering with rheumatoid arthritis, and her observations are very interesting. All but two of the twenty-one cases examined showed either an excess of aromatic sulphates or else the presence of indican. Considerable variation was noted; in some instances indican was entirely absent, while other products of putrefaction, aromatic sulphates, were in excess of normal. In other instances one of the putrefactive products, indol, skatol or phenol, might be found in excess, while their total amount was not unusually great.

Comment should be made on the etiology of the cases which she examined as rheumatoid arthritis, with the assumption that they were all of the same origin. No data are given by her to show that several types were not included, some of them originating from intestinal toxemias, and others, in which the intestinal condition was secondary, to metabolic or neurotic disturbances, but which showed intestinal putrefactions from the inactive life and sluggish peristalsis that most arthritic patients complain of sooner or later. Her results are in accord with the fluctuating conditions known to exist in the intestine and serve to emphasize the probability that severe types of arthritis are made worse, and perhaps perpetuated after original causes have ceased to act, by intestinal putrefactions that have established themselves while the patients have been hopelessly crippled.

4. Clinical data not given in this article on account of their incomplete state suggest another type of arthritis originating in the intestinal tract independently of bacteria and due to defective digestion. Salient features of this type are its occurrence in old age, and the existence simply of chronic dyspepsia in characteristic cases. The type of joint changes in such patients is distinctly different from those typically associated with intestinal bacterial toxemias. In the former pronounced hyperthropic overgrowths of bone occur, while in intestinal toxemias of bacterial origin the damage is restricted mainly to soft tissues or very slight atrophy of bony trabeculæ. Defective metabolic processes going on in worn-out cells of the intestinal mucosa may conceivably lead to formation of unusual substances which act on joints, similarly as visible defects like cancer are associated with a toxemia from defective metabolic activities of cancer cells. It is admitted, however, that this origin of arthritis cannot at present be satisfactorily proved.

APPLICATION OF THE THEORETICAL CONCEPTION TO CONDITIONS EXISTING IN THE GASTRO-INTESTINAL TRACT

Some of the facts to be reconciled by these ideas may be illustrated by the following groups of cases: patients with fecal impactions who have severe arthritis; patients with fecal impactions who have no arthritis; patients with dilatation of stomach and enteroptosis with and without arthritis; patients with no severe intestinal symptoms, yet who have joint complications.

A starting point for explanation may be taken from conditions existing in the joints. Blood circulating through joints and containing irritating substances derived from the intestinal tract will or will not produce demonstrable lesions, according to the resistance of joint structures. In the majority of instances these are very resistant and withstand protracted, severe intestinal toxemias. The vital resistance of joint tissues also is constantly being exercised in other ways toward other bacterial toxins and metabolic substances of the blood, and in the large majority of all instances the joints are able to maintain their health in spite of adverse variable conditions.

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[6] MacNeal, W. J., Latzer, L. L. and Kerr, J. E.: Fecal Bacteria of Healthy Men, Jour. Infect. Dis., April 1, 1909, vi, No. 2.

[7] Baldwin, Helen: Organic Acid in the Urine, Am. Jour. Med. Sc., 1904, new series, cxxviii, 1045.

It should be recalled that arthritis occurs as a complication of gonorrhea in only a very small percentage of cases, and is also associated with tuberculosis, pneumonia, scarlet fever, tonsillitis, typhoid fever, dysentery and other infections, always in very small percentage, too, of the total numbers of cases of these diseases.

When the severe toxemia of a pneumonia, scarlet fever, typhoid fever or dysentery subsides the arthritic symptoms subside also, if they have been present, as soon as the tissue cells are able to cope with and overcome the diminishing toxic influences of the blood. Likewise, when fecal impactions are removed and diminution in absorption of irritating substances from the intestine occurs, then there is also permanent subsidence of arthritic symptoms if they are present, because this extreme state is readily prevented again. Explanation of the observations enumerated, therefore, may be made as follows:

Patients with fecal impactions are absorbing large quantities of mild intestinal toxins that occasionally overcome fairly resistant joints, but in the majority of instances the tissues are able to resist even this excessive absorption.

Patients with dilatation of the stomach accompanied by putrefaction of gastric contents likewise are absorbing large quantities of putrefactive products, but joints are able to successfully resist in the majority of these instances, too. A few patients do succumb, however, and their arthritic condition may be helped by treatment of the stomach.

Patients with no severe intestinal disturbances must have particularly susceptible joint tissues in order to have arthritis as an accompaniment of such slight digestive defects, and very little can be accomplished for their cure.

DIAGNOSIS

Arthritis occurring with dysentery, typhoid fever or other acute conditions presents comparatively slight difficulties, but when caused by mild intestinal toxemias, histories related by patients suggest preliminary treatments, and diagnosis has to be made from the responses to these tests.

Obscurity of origin, therefore, is a prominent feature, and when no etiologic factors are discovered to account for the existing arthritis then daily irrigations of the colon with warm water are prescribed, together with some general tonic like elixir of iron, quinin, and strychnin phosphates, and after two or three weeks an idea may be obtained of the importance of the intestinal element. In favorable instances improvement takes place in the general condition of the patient, also in the skin and sclerotics of the eyes; the appetite is improved and joint pains begin to lessen. Further improvements as the result of more vigorous measures that will be described later make the diagnosis positive.

In some individuals, especially small, poorly developed women, the history of a slowly developing arthritis from no apparent cause, accompanied by a muddy, sallow complexion and lusterless eyes and loss of weight, permits a probable diagnosis immediately, but there are many other patients whose condition cannot be determined. Symptoms which are commonly associated with disorders of stomach and intestine frequently occur, but are too inconstant to have diagnostic value, the most striking peculiarities of this class being their insidiousness and absence of well-defined symptoms. The following list represents actual cases that have responded to intestinal treatment:

Case 1.—Appetite good; bowels moving regularly; slight pain at umbilicus at night; occasional periods of dizziness; no acute gastric or intestinal symptoms; fecal mass palpable in cecum.

Case 2.—Appetite good; bowels move two or three times daily; no gastric or intestinal symptoms; abdominal examination negative.

Case 3.—Poor digestion and continual craving for food; habitual constipation; no acute gastric or intestinal symptoms; abdominal examination negative.

Case 4.—Appetite moderate; bowels constipated; no gastric or intestinal symptoms; abdominal examination negative.

Case 5.—Appetite poor; bowels obstinately constipated; no gastric or abdominal symptoms; fecal masses palpable in colon.

Case 6.—Appetite moderate; bowels constipated; no gastric or abdominal symptoms; examination negative.

Case 7.—Capricious appetite, much fat pork eaten; bowels move once or twice daily; vomiting, severe abdominal pains, diarrhea; operation for gall-stones; complexion waxy, spleen enlarged; no fecal masses or abdominal tenderness.

Case 8.—Appetite moderate; bowels regular; no gastric or intestinal symptoms; abdominal examination negative.

Ether anesthesia conducted in the manner usually employed at surgical operations, but stopped as soon as muscular relaxation takes place, has different aftereffects on patients suffering with different types of arthritis.

For example, the patient with fecal impaction cited above experienced a short rise of temperature from normal to 102 F., also a brief attack of abdominal pain that required morphin, and slight increase in periarticular swellings following etherization for twenty minutes; while on the other hand, there may be very striking diminution of severe articular pains and surprising restoration of motion temporarily in affected joints after anesthesia.

These differences may possibly have diagnostic value in severe types associated with great pain and reflex muscle spasm. Moreover, etherization in such patients is often advisable, as Dr. T. S. P. Strangeways has pointed out, in order to differentiate between pure muscular spasm and adhesions of synovial membranes.

The effect of ether is evidently on articular sensory nerves and indicates differences of their irritability; consequently, it may perhaps also show pathologic conditions of unstable equilibrium in them by their unusual response, and suggests an important nervous element in underlying causes for such cases as respond to ether stimulation. Too few observations have yet been made to allow conclusions, and only the less frequent types in which articular pains and reflex muscle spasm are severe exhibit differences sufficiently well to be positively identified. Mention is made of this phenomenon, because there have been a few instances in which it has presented an additional clue of use in determining the nature of the arthritic processes.

PROGNOSIS AND TREATMENT OF ARTHRITIS ORIGINATING IN INTESTINAL TOXEMIAS, UNASSOCIATED WITH SPECIFIC PATHOGENIC ORGANISMS

Unusual intestinal conditions like fecal impactions that may be remedied, also many cases of intestinal disorders that have remained unrecognized and therefore neglected, offer favorable prognosis for the cure of associated arthritic disease. On the other hand, chronic intestinal troubles which have proven resistant to careful treatment and that are associated with very weak joints present an unfavorable outlook. Prediction whether a given case is curable or not often depends on the response to the first few weeks of preliminary treatment, and frequently cannot be told otherwise. Favorable prognosis always depends on the possibility of permanently diminishing the toxic substances in the blood. Attention, therefore, is directed logically toward diminishing the formation and absorption of toxic substances in the intestine and increasing the resistance of joints.

METHODS OF DIMINISHING THE FORMATION AND ABSORPTION OF INTESTINAL TOXINS

These include modifications in diet, introduction of antagonistic micro-organisms, intestinal antiseptics, stimulating drugs, stomach and colon lavage, abdominal supportive apparatus to correct visceral displacements and to overcome stasis of intestinal contents, surgical operations, colostomies, appendicostomies and operations on the stomach.

Diets are modified to lessen the quantity and nitrogen content of the food; buttermilk by means of its lactic acid organisms inhibits the growth of putrefactive anaerobes in the intestinal tract; various intestinal antiseptics may act in a somewhat similar manner. Medicinal tonics tone up digestive and absorptive functions and indirectly lessen putrefaction by minimizing the food available for putrefactive micro-organisms. Purgatives clear away accumulations of food that are fermenting and giving rise to toxic substances. Stomach or colon lavage also washes away decomposing food products and diminishes the formation of irritating bodies. Abdominal supports applied to individuals with very flabby, pendulous abdomens help to restore normal conditions and healthy action of stomach and intestine, and also minimize putrefactive changes; appendicostomies have been tried in severe cases of arthritis in order to secure more thorough irrigation of the colon and thus prevent absorption of intestinal toxins.

The aim of all treatments is removal of accumulations of food and putrefactive bacteria already lodged in the gastro-intestinal tract and prevention of reaccumulations, and simple measures which patients may continue to carry out themselves offer the most chances for cure.

In ordinary cases it is well to begin with purgation and colon irrigation until the intestine is thoroughly cleared, then to continue this treatment sufficiently energetically to maintain the advantage gained.

It is also well to put the patient to bed during the first week or so, while clearing the intestinal tract, and simultaneously to cut down the diet in order to lessen bacterial action to a minimum. A tonic may advantageously be given at the same time. In favorable instances, after two or three weeks, the joint pains begin to lessen, mobility increases and periarticular swellings disappear very slowly during the several months that follow.

In many cases improvement goes on for a time, then ceases, and symptoms may even recur. The probable explanation is that treatment has diminished absorption of toxic substances sufficiently to ameliorate symptoms partially, yet not enough to allow joint tissues to regain their normal function entirely. In these individuals operations which remove the absorptive function of the large intestine altogether, as colostomies, probably would be followed by complete subsidence of symptoms; but as recurrence seems likely to take place after colostomy openings have been closed, these operations should be seldom undertaken, because they are not permanent, and the discomfort attending them may be even worse than the condition which they are intended to relieve. They may be justifiable in rare instances, after all other methods have failed, with the hope of gaining temporary relief from the toxemia and allowing the tissues to recuperate sufficiently to resist new conditions in the future. Appendicostomies do not abolish the absorptive function of the colon as colostomies do, and consequently possess little advantage, if any, over purgation and intestinal lavage by rectum; moreover, they may be a considerable inconvenience.

Putrefactive changes taking place in the contents of the stomach, due to gastric dilatation, pyloric stenosis, congenital defects, or other pathologic states, require special treatment, differing according to the nature of the pathologic changes. The reader must be referred for special surgical and medical methods to text-books of surgery and medicine, because the subject is too comprehensive for this article.

The problem of avoiding reinfection of the digestive tract after clearing it of bacteria and decomposing foods has to be thought of, as bacteria constantly are being introduced through the mouth; therefore the sources for reinfection should be considered.

Bacteria get into the digestive tract continually with the food, and prevention of the spread of infectious diseases is a problem that public health authorities are dealing with. Milk and water supplies are subjected to rigid chemical and bacteriologic examinations in order to maintain a certain standard of purity and it is not inconceivable that such examinations may be further extended to include cold-storage products of various kinds in the future if it is proved that putrefactive anaerobic bacteria have sufficiently important pathogenic properties. It is well recognized by milk dealers that milk may spoil, although refrigerated, without becoming sour. These putrefactive changes of spoiling are due to growth of anaerobic bacteria that develop at low temperatures in which other micro-organisms cannot flourish. Eggs, also, that are kept in cold storage occasionally spoil from anaerobic bacteria and molds on the shells growing through the pores.

Cold-storage meats and fish seem open to the same dangers, although no definite statements can be made because investigation of bacterial changes of refrigerated meats have not been extensively undertaken; but it ~~seems~~ possible that the elaborate system of cold storage which has developed of late years may occasionally be responsible for intestinal putrefactions, and that nitrogenous storage products may sometimes contribute flourishing growths of spore-forming bacteria that have developed in the interval during which the products have been kept. This seems to apply especially to meats that have been removed, exposed for sale, and then again returned to cold storage, as bacteria may get well started in development when meats are exposed for sale in a warm atmosphere. These organisms are capable also of resisting unusual degrees of heat, and therefore may find their way into the alimentary tract as spores that are capable of further development. Certain cases of chronic arthritis may therefore rarely represent one of the special illustrations of this relationship between cold-storage methods and public health.

Bacteria, besides being taken with the food, also sometimes grow luxuriantly in the mouth cavity, and this fact must be given consideration when attempting to reduce intestinal putrefactions, and cases of pyorrhea alveolaris should receive treatment in order to diminish the numbers of anaerobic bacteria finding their way into the stomach.

METHODS OF IMPROVING THE DIGESTIVE FUNCTIONS OF THE GASTRO-INTESTINAL TRACT

These methods are well known to all physicians and are briefly outlined to show their application to special arthritic conditions discussed in this paper.

Normal secretory, absorptive and peristaltic functions of stomach and intestine may become deranged through accumulations of decomposing foods which exert a toxic influence; visceral saggings may sometimes result in harmful interference with blood-supply and nerve-supply of the organs; or dilatations may mechanically stretch and interfere with the function of the epithelial cells of the mucosa.

Digestive functions may be improved by treatment of each of these various pathologic states as they occur, but details of treatment for dilatations, muscular atonics, stenoses, adhesions, inflammations, displacements, ulcerations and malignant growths obviously cannot be given at length.

Mechanical stretchings and interference with blood-vessels and nerves due to relaxed abdominal walls should be treated with abdominal supports, as Goldthwait[8] recommends.

The behavior of epithelial cells of gastric and intestinal mucosa with regard to their secretory and absorptive functions depends largely on the chemical and nervous stimuli they receive, and maintenance of normal metabolic processes in them is of very great importance, as thereby bacterial decompositions are indirectly lessened and unusual substances due to defective metabolic processes are avoided. The lining epithelium is constantly being influenced through variable states of the blood, food, drugs and nervous impulses from the central nervous system; consequently foods and drugs, which may be changed at will, furnish an important means of regulating the health of these cells.

The most favorable conditions may be secured by the selection of a diet of suitable quality and quantity, low nitrogen content being one of the quality requisites; an amount that avoids accumulation of the unabsorbed excess indicating in a rough way the suitable quantity of food. Accumulations already present should be cleared away by means suggested previously. Dr. J. H. Kellogg has had success with many arthritic patients who exhibit intestinal toxemias by the use of a vegetarian diet of low nitrogen content. There seems to be no doubt as to the efficiency of this cure, but it is disagreeable for some persons and a limited mixed diet appears usually to be sufficient.

The effect of various drugs on digestion is too well known to require comment. The list includes preparations to increase secretion, lessen acidity, promote absorption, regulate evacuation, lessen movement, relax muscular spasm and inhibit bacterial action. Well-tried remedies like nux vomica, preparations of iron, sodium bicarbonate, pepsin, hydrochloric acid, calomel, saline cathartics and a few others fulfill most of the requirements.

The effect of mental depression from the gloomy outlook and chronicity of some cases has a very important influence on digestion of arthritic patients. This frequently is underestimated, but should be met with unusual optimism by the physician in order to overcome it. Maintenance of proper mental attitude of patients with chronic troubles is one of the most important and difficult problems of treatment. Patients who have responded partially to intestinal treatment and whose progress has become arrested should have occasional modifications made in their routine, as slight variations assist in maintaining greater activity of the intestinal mucosa and prevent a relapse into a chronic state again. By careful attention, and by means adapted to each individual, it seems possible to nurse the alimentary tract back to a normal state so that digestion by tissue cells is permanently improved and intestinal putrefaction permanently diminished, and the only essentials for treatment in most cases are a few simple remedies and sufficient consideration of each patient to accurately understand the existing state of affairs.

METHODS FOR RAISING RESISTANCE OF JOINT TISSUES

The only effective way known at present to increase joint resistance is to increase the individual's general health. Hygienic treatment advised for tuberculosis is especially well adapted to raise the resistance and increase the health of arthritic patients. There are local physical stimulants, as heat and cold, and electricity, that may be employed, but their administration frequently results in more harm than good from overstimulation of the tired-out tissues. The possibility of immunizing joints to bacterial and metabolic toxins has not yet been satisfactorily demonstrated.

Joints inflamed from intestinal irritants should be kept at rest during the active inflammatory period in plaster casts and afterward gently stimulated to increase the blood-supply locally after the intestinal tract has been cleared out and the patient's general condition has begun to improve. The blood may then be assumed to contain a diminished amount of toxin, and an increased supply of blood to the joints then becomes beneficial.

BACTERIOLOGIC METHODS

Results of examinations of stools must indicate conditions as they exist within the bowel, and not represent changes occurring subsequently; therefore the following precautions have been taken:

Stools were caught in sterilized tin cans and brought immediately to the laboratory, where they were kept at a low temperature and examined within a few hours.

For examination 0.5 gm. of fecal material was accurately weighed out, rubbed up in sterile normal salt solution, and a uniform suspension of precisely 50 c.c. obtained.

Plate cultures of litmus lactose agar, litmus lactose gelatin, and blood agar were inoculated with this 1/100 fecal suspension after thorough shaking and further dilution. The best plates were secured by 0.5 c.c. of 1 to 100,000 dilution and 1 c.c. of 1 to 1,000,000 dilution.

Spore-bearing anaerobic bacteria were determined by heating 10 c.c. of 1/100 fecal suspension in a capped tube in a water-bath for fifteen minutes at 80 C., after which 0.5 c.c. was plated with blood-agar, and 0.25 c.c. with plain agar, and 0.25 c.c. with a second blood-agar plate.

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[8] Goldthwait, J. E., and Brown, Lloyd T.: The Cause of Gastroptosis and Enteroptosis, with Their Possible Importance as a Causative Factor in the Rheumatoid Diseases, Boston Med. and Surg. Jour., May 26, 1910.

Litmus lactose gelatin plates were kept three days at room temperature, then examined and counted. Litmus-lactose-agar plates were incubated at 37 C. for twenty-four hours before examination. Blood-agar plates were kept three days at 37 C. under anaerobic conditions, secured by passing hydrogen through Novy jars containing the plate cultures, then extracting the last traces of oxygen with pyrogallic acid and sodium hydrate.

Examinations at the end of three days were made and especial attention paid to hemolytic powers of the developing colonies. Oval colonies surrounded by distinct hemolytic zones developing from spores in blood-agar corresponded morphologically and culturally with *B. aerogenes capsulatus* or *B. perfringens*. Subcultures were made from typical colonies in each stool and further study of these confirmed the first impression that the large majority were *B. aerogenes capsulatus*.

Another paper, purely bacteriologic in nature, dealing with all the varieties of spore-forming anaerobic bacteria that have been found, may be published later, and for this reason only such points are mentioned in this article as bear on the clinical aspects of the relationship between joints and gastro-intestinal disorders.

It should be stated in summarizing that in a considerable proportion of intestinal cases improvement or cure may be effected; that the number is increasing as our knowledge of conditions and skill in applying simple remedies becomes extended, and that insistence should be made on early treatment before destructive changes have gone on that are beyond repair.

In conclusion I wish to acknowledge my indebtedness for clinical material to Drs. E. G. Brackett, Joel E. Goldthwait, Robert B. Osgood and Charles F. Painter, who have generously contributed private patients, and permitted the use of the orthopedic clinics of the Massachusetts General Hospital and Carney Hospital; also to Dr. Theobald Smith for valuable suggestions concerning bacteriologic methods.

8 Marlborough Street.

AN ACCURATE FORMULA FOR USE IN THE MODIFICATION OF COW'S MILK IN THE ARTIFICIAL FEEDING OF INFANTS

GEORGE REILY MOFFITT, M.D.
HARRISBURG, PA.

If the composition of milk from any source is definitely known, and known to be constant, a mathematically accurate formula may be devised by which artificial mixtures of any desired strength of fat, carbohydrates, and proteins may be compounded. The construction of such formulas is a somewhat long and tedious algebraic process, and when completed they are so complex that the compounding of milk mixtures by their use requires too much time and labor to be of service to the general practitioner.

With this fact in view, after having devised a formula based on 4 per cent. milk and 16 per cent. cream, I constructed a table of over 400 milk mixtures by ascertaining according to the formula, the amounts of milk, cream and milk-sugar required in compounding these mixtures, so that mixtures may be made up merely by reference to the table.

According to L. E. Holt[1] the composition of average herd milk is, fat 4 per cent., carbohydrates 4.50 per cent., proteins 3.50 per cent., etc., and the composition of what is known as 16 per cent. cream is, fat 16 per cent., carbohydrates 4.05 per cent., proteins 3.20 per cent., etc.

The formula based on milk and cream of this composition is calculated in the following manner:

Suppose a represent the per cent. of fat, b the per cent. of carbohydrates, and c the per cent. of proteins in any artificial mixture; that is, that which is commonly known as, for example, a 3-6-1 mixture (3 per cent. of fat, 6 per cent. of carbohydrates, and 1 per cent. of proteins) we term an a-b-c mixture. Now let x represent the per cent. of milk, y the per cent. of cream, and z the per cent. of milk-sugar necessary to compound such a mixture. The diluent will then be equal to $100-(x+y)$.

It is then obvious that

$$\frac{4x}{100}+\frac{16y}{100}=a \text{ or } x+4y=25a \tag{1}$$

$$\text{and}\ \frac{4.5x}{100}+\frac{4.05y}{100}+z=b \text{ or } 90x+81y+2{,}000z=2{,}000b \tag{2}$$

$$\text{also}\ \frac{3.5x}{100}+\frac{3.2y}{100}=c \text{ or } 35x+32y=1{,}000c \tag{3}$$

By subtracting Equation 1 multiplied by 8 $(8x+32y=200a)$ from Equation 3 we have

$$27x=1.000c-200a \text{ or } x=\frac{1{,}000c-200a}{27}$$

By subtracting Equation 3 from Equation 1, multiplied by 35 $(35x+140y=875a)$, we have

$$108y=875a-1{,}000c \text{ or } y=\frac{875a-1{,}000c}{108}$$

By substituting these values of x and y in Equation 2 we have

$$\frac{90\ (1{,}000c-200a)}{27}+\frac{81\ (875a-1{,}000c)}{108}+2{,}000z=2{,}000b$$

that is $40{,}000c-8{,}000a+7{,}875a-4{,}000c+24{,}000z=24{,}000b$

$$\text{or } z=\frac{a+192b-248c}{192}$$

We then have the values of x, y and z in terms of a, b and c; that is to say, we have the per cent. of milk, cream and milk-sugar necessary to make up an a-b-c mixture, and any values whatever (of fat, carbohydrate and protein percentages), such as 3, 6 and 1 may be substituted for a, b and c.

Our formula then is

$$\text{per cent. of milk}=\frac{1{,}000c-200a}{27} \tag{1}$$

$$\text{per cent. of cream}=\frac{875a-1{,}000c}{108} \tag{2}$$

$$\text{per cent. of milk-sugar}=\frac{a+192b-248c}{192} \tag{3}$$

To demonstrate the accuracy of the calculation in devising this formula, suppose we desire a 4-4.5-3.5 mixture, *i. e.*, a mixture containing 4 per cent. of fat, 4.5 per cent. of carbohydrates and 3.5 per cent. of proteins. It will be seen that this is cow's milk.

Substituting 3.5 for c and 4 for a in (1), we have

$$\frac{1{,}000\times3.5-200\times4}{27}=\frac{3{,}500.0-800}{27}=\frac{2.700}{27}=100$$

Substituting likewise in (2), we have

$$\frac{875\times4-1{,}000\times3.5}{108}=\frac{3.500-3{,}500.0}{108}=0$$

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[1] The Diseases of Infancy and Childhood.

Substituting these values in (3), and also 4.5 for *b*, we have

$$\frac{4+192\times4.5-248\times3.5}{192}=\frac{4+864.0-868.0}{192}=0$$

showing that, in compounding a 4-4.5-3.5 mixture, we take 100 parts *milk*, no cream, no sugar and no diluent.

Now suppose we desire a 16-4.05-3.2 mixture (cream).

Substituting 3.2 for *c* and 16 for *a* in (1), we have

$$\frac{1{,}000\times3.2-200\times16}{27}=\frac{3{,}200.0-3{,}200}{27}=0$$

Substituting likewise in (2), we have

$$\frac{875\times16-1{,}000\times3.2}{108}=\frac{14{,}000-3{,}200.0}{108}=\frac{10{,}800}{108}=100$$

Substituting these values in (3), and also 4.05 for *b*, we have

$$\frac{16+192\times4.05-248\times3.2}{192}=\frac{16+777.60-793.6}{192}=0$$

showing that, in compounding a 16-4.05-3.2 mixture, we take 100 parts of cream, no milk, no sugar and no diluent.

In making a table of various mixtures from this formula, I have carried the calculations to a 0.1 per cent., *i. e.*, to three decimal places, which has shown results within 0.04 per cent. of perfect accuracy in all mixtures in which I have calculated the percentages of fat, carbohydrates and proteins from the amounts of milk, cream and sugar used in compounding such mixtures.

The following formula used in many hospitals, and I believe the most accurate one now in general use, is much less accurate than the preceding, especially in regard to the protein content:

$$C=\frac{Q\,(F-P)}{12}\qquad M=\frac{Q\times P}{4}-C$$

$$S=\frac{Q\,(CH-P)}{100}\qquad LW=\frac{Q}{10}$$

$$W=Q-(C+M+LW)$$

In this formula F represents the desired per cent. of fat, CH the desired per cent. of carbohydrates, P the desired per cent. of proteins, Q the quantity desired, C the amount of cream required, M milk required, LW lime water required and W water required.

Suppose we desire, say 24 ounces of a 3-6-1 mixture. By this formula we find that C = 4 ounces, M = 2 ounces and S = 1.2 ounces, i. e., the required amount of cream is 4 ounces, milk 2 ounces and milk-sugar 1.2 ounces. Now 4 ounces of cream contain 0.64 ounce of fat and 2 ounces of milk contain 0.08 ounce of fat, i. e., in a 24-ounce mixture by this formula there are 0.72 ounce of fat, exactly 3 per cent. (as desired) as seen by dividing 72 by 24.

Now 4 ounces of cream contain 0.162 ounce of carbohydrates and 2 ounces of milk contain 0.09 ounce of carbohydrates and we add 1.2 ounces of sugar, making in all 1.452 ounces of carbohydrates in the 24-ounce mixture or 6.05 per cent., as seen by dividing 145.2 by 24. Thus far the formula is quite accurate, the carbohydrates being inaccurate by only 0.05 of one per cent. But 4 ounces of cream contain 0.128 ounce of proteins, and 2 ounces of milk contain 0.07 ounce of proteins, i. e., 24 ounces contain 0.198 ounce of proteins or 0.825 per cent., as seen by dividing 19.8 by 24. Thus by this formula the proteins in this particular mixture are inaccurate by over 0.17 per cent.

By the table from the formula which I have described, 24 ounces of a 3-6-1 mixture require 3.5 ounces of milk, and 3.6 ounces of cream and 1.13 ounces of milk-sugar. Now 3.5 ounces of milk and 3.6 ounces of cream contain 0.716 ounce of fat, i. e., 2.98 per cent. of 24 ounces (inaccurate by but 0.02 per cent.) and 0.2377 ounce of proteins, i. e., 0.99+ per cent. of 24 ounces (within 0.01 per cent. of absolute accuracy), and these amounts of milk and cream plus the added sugar total in all 1.4333 ounces of carbohydrates in the 24 ounce mixture of 5.97+ per cent. (within 0.03 per cent.).

In calculating the amounts of the ingredients in 24 ounces of a 3.25-6-1.25 mixture by the old formula we arrive at an even more inaccurate result in regard to the proteins, for C = 4 ounces, M = 3.5 ounces and S = 1.14 ounces, and in 24 ounces, 4 ounces of cream and 3.5 ounces of milk give 3.25 per cent. fat (accurate) and 1.04 per cent. of proteins (0.21 per cent. out of the way), and these amounts of cream and milk with the added 1.14 ounces of milk-sugar give 6.08 per cent. of carbohydrates (0.08 per cent. off) practically a 3.25-6-1 mixture instead of a 3.25-6-1.25.

By our table 24 ounces of a 3.25-6-1.25 mixture require 5.328 ounces of milk, 3.528 ounces of cream and 1.056 ounces of milk-sugar, giving 3.24 per cent. of fat, 5.97 per cent. of carbohydrates and 1.24 per cent. of proteins.

The greatest inaccuracy encountered in the old formula, and in our table as well, is the last mixture in the table, viz., 5-7-3.50. By the old formula in a 24-ounce mixture we have 3 ounces of cream, 18 ounces of milk and 0.84 ounce of milk-sugar. These amounts in 24 ounces give 5 per cent. of fat (accurate), 7.38 per cent. of carbohydrates (0.38 per cent. off) and 3.02 per cent. of proteins (0.48 off), practically a 5-7-3 mixture instead of a 5-7-3.50 mixture as far as the proteins are concerned.

By our table we find in 24 ounces of a 5-7-3.50 mixture we require of milk 22.08 ounces, cream 1.92 ounces and milk-sugar 0.6 ounce. These amounts give of fat 4.96 per cent. (0.04 off), carbohydrates 6.96 per cent. (0.04 off) and proteins 3.47 per cent. (but 0.03 off).

Had the tables been carried out to one more decimal place all calculations would have been within 0.01 per cent. of absolute accuracy.

It will be seen, therefore, that the old formula is quite inaccurate in regard to the protein content which, having to do with the curd, should be the most accurate, especially when we are dealing with infants having digestive disturbances.

In speaking of proteins Holt[1] says:

> The modification of proteids is the most important change necessary in cow's milk, for it is the proteids which give most of the trouble to the infant's digestion. . . It is not enough to reduce the proteids to the average present in woman's milk, *i. e.*, 1.5 per cent. During the early months the percentage should be less than this. . . I believe the secret of success in feeding cow's milk is to begin with the proteids so low as not to disturb the infant's digestion, and then slowly, but steadily, raise the quantity. . . Except to start with too high proteids, no more common mistake is made than to continue long with too low proteids. Anemia, malnutrition, and, I believe, not infrequently scurvy, are seen as a consequence of this practice. The gradual increase is therefore just as important as the low beginning.

In the table I have not considered diluents, for it is evident that after ascertaining the amounts of milk, cream and milk-sugar necessary for a certain amount of a given mixture, a sufficient quantity of water or other diluent is added to the milk, cream and sugar to make the required amount. If lime-water is to be used, 5 or 10 per cent., as desired, is added before adding the diluent.

If barley water or other cereal water is used, as recommended by many to assist in breaking up the curd, it, too, may be added in the quantity desired before adding the water. Since barley water contains of fat 0.05 per cent., carbohydrates 1.63 per cent. and proteins 0.09 per cent., (Holt), when it alone is used as the diluent, a reduction should be made in the carbohydrate per cent. of the formula; e. g., if a 3-6-1 mixture is desired the ingredients of a 3-5-1 mixture should be used, the percentage of the carbohydrates being subsequently raised by the addition of the barley water. The same point must be observed when adding the various dextrinizing powders to the milk mixtures. The dextrinizing process raises the sugar content about 2 per cent., so if a 3-6-1 mixture were desired, the ingredients of a 3-4-1 mixture are dextrinized.

SCHEDULE FOR AN AVERAGE HEALTHY INFANT, SHOWING PERCENTAGES OF FAT, SUGAR AND PROTEIDS, AND THE QUANTITIES

Age.	Percentages of— Fat.	Sugar.	Proteids.	Quantity for one feeding. Ounces.	Grams.	No. feedings in 24 hours.	Interval by day.
Premature infants	1.00	4.00	0.25	¼ - ¾	7-22	12-18	1-1½ hours
First to fourth day	1.00	5.00	0.30	1 - 1½	30-45	6-10	2-4 "
Fifth to seventh day	1.50	5.00	0.50	1 - 2	30-60	10	2 "
Second week	2.00	6.00	0.60	2 - 2½	60-75	10	2 "
Third week	2.50	6.00	0.80	2 - 3½	60-110	10	2 "
Fourth to eighth week	3.00	6.00	1.00	2½ - 4	75-125	9	2½ "
Third month	3.00	6.00	1.25	3 - 5	90-155	8	2½ "
Fourth month	3.50	7.00	1.50	3½ - 5½	110-170	7	3 "
Fifth month	3.50	7.00	1.75	4 - 6	125-185	7	3 "
Sixth to tenth month	4.00	7.00	2.00	5 - 8	155-250	6	3 "
Eleventh month	4.00	5.00	2.50	6 - 9	185-280	5	4 "
Twelfth month	4.00	5.00	3.00	7 - 9	220-280	5	4 "
Thirteenth month	4.00	4.50	3.50	7 -10	220-310	5	4 "

In the modification of cow's milk by any formula it is essential to know the composition of the milk and cream used and while it is true that average herd milk is usually 4 per cent. and gravity cream is usually 16 per cent. it is advisable to make the simple fat estimations with the Babcock centrifuge from time to time, for if the fat percentage is correct, the amounts of the other ingredients will also be correct.

Holt[1] recommends the accompanying schedule for an average healthy infant, showing percentages of fat, sugar, and proteins, and the quantities.

It will be seen by this schedule how important it is to have great accuracy in respect to the proteins.

A few of the mixtures from the table calculated by the formula which I have described appear below.[2] If the per cent. or parts per hundred of milk, cream and milk sugar necessary to make up the mixtures were actually given in the table, the decimal point would be two spaces to the right of what it now is.

As the table is, the amounts of milk, cream and milk sugar in a certain amount of any mixture are found by multiplying that amount by the figures opposite the mixture in the table, for example, suppose we desire 36 ounces of a 3-6-1 mixture. We find that the three numbers in the table opposite 3.00-6.00-1.00 are 0.148, 0.150 and 0.047. By multiplying 36 by 0.148 we have the amount of milk, multiplying by 0.15 we have the amount of cream and by 0.047 the amount of milk sugar in ounces. Or suppose we desire 850 gm. of a 3-6-1 mixture. By multiplying 850 by 0.148 we have the amount of milk, by 0.15 the amount of cream and by 0.047 the amount of milk-sugar in grams.

One-half the quantity of cane-sugar may, of course, be used in the place of milk-sugar.

1705 North Front Street.

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[2] The following list of mixtures has been selected from a very elaborate table including over 400 mixtures, which I have calculated by the formula described above, and is given here to convey some idea of the character of the complete table which will be published with the reprint of this article:

Mixture.— Fat.	Carbohydrate.	Protein.	Milk.	Cream.	Sugar.
0.50	4.00	0.25	.055	.017	.036
0.75	4.00	0.25	.037	.037	.036
1.00	4.00	0.25	.018	.057	.036
1.00	5.00	0.30	.037	.053	.046
1.50	5.00	0.50	.074	.075	.043
2.00	6.00	0.60	.074	.107	.052
2.50	6.00	0.80	.111	.129	.049
3.00	6.00	1.00	.148	.150	.047
3.00	6.00	1.25	.240	.127	.044
3.25	6.00	1.25	.203	.167	.044
3.50	6.00	1.25	.222	.147	.044
3.50	7.00	1.50	.296	.144	.051
3.50	7.00	1.75	.388	.126	.047
4.00	7.00	2.00	.444	.139	.044
4.00	5.00	2.50	.630	.092	.018
4.00	5.00	3.00	.815	.046	.011
4.00	4.50	3.50	1.000	.000	.000
5.00	7.00	3.50	.920	.080	.025

THE RADICAL CURE OF MALARIA; ITS IMPORTANCE AND HOW IT IS ATTAINED *

SEALE HARRIS, M.D.
Professor of Practice of Medicine and Clinical Medicine, University of Alabama; Visiting Physician, City Hospital
MOBILE, ALA.

Science has almost solved the problem of malaria in all its phases; but, despite our almost complete knowledge of the life-history of the malarial parasite both in man and in the mosquito, despite our familiarity with all the manifestations of the disease, and despite the fact that every physician knows that it is easily prevented and ordinarily yields to treatment, malaria, though decreasing in severity and frequency, continues as one of the most prevalent diseases in many localities of the United States, in some places its mortality rate amounting to 25 per cent. of the total number of deaths.[1]

According to the statistics obtained from the last census, the number of deaths from malaria in the United States in the year 1900 was 14,909. The following states showed the greatest mortality: Arkansas leading with 1,730; then Texas, with 1,331; Alabama, 1,055; Louisiana, 1,030; Georgia, 1,011; Tennessee, 987; Missouri, 965; Mississippi, 938; South Carolina, 749; North Carolina, 527; Illinois, 497; Virginia, 409; Indiana, 340; and New York, 308.[2] These statistics are of question-

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Sutherland, H. L.: Gulf States Jour. Med. and Surg. and Jour. Southern Med. Assn., February, 1910.

[2] Twelfth Census of the United States, Vital Statistics, 1900, I and II.

able value, since they are largely derived from information obtained by the census enumerators in the rural districts, and no doubt many deaths reported from malaria were due to typhoid fever and other diseases. It should be remembered, however, that malaria as a complication of pregnancy and of a number of diseases, and as a cause of arteriosclerosis and nephritis, is responsible for many deaths which are ascribed to other causes. It would therefore seem that these statistics do not overestimate the number of lives sacrificed to this easily preventable and curable disease.

The simple statement of the number of deaths from malaria does not half tell the story of its ravages. Its expense to the people of the United States is appalling. It is estimated that malaria costs our nation from $50,000,000 to $100,000,000 annually.[3] Dr. Albert Woldert, of Tyler, Texas, after a careful study of the mortality and morbidity rates of Texas, estimates that malaria costs that state more than $5,000,000 per year.[4] Assuming that the United States census mortality rates are as correct for Missouri as for Texas, and that the morbidity rates are in the same ratio, malaria taxes the state of Missouri more than $3,000,000 annually.

MALARIA UNNECESSARY

The unnecessary burden of malaria can be relieved simply by radically curing those suffering from the disease, but, strange to relate, this most important point has been most neglected. Malaria can be entirely eradicated, in one year, in any community, without regard to the number of anophelines present, if every person having the disease will take quinin long enough to be completely cured.[5] It is man, and not the mosquito, that carries malaria through the winter, thus perpetuating the disease. Therefore, the most important measure in the crusade against malaria is its radical cure, and it is this phase of the subject that I shall discuss.

The average physician does not regard malaria as a serious disease. He relieves the acute symptoms in a few days and when a patient dies of malaria he feels that the patient has neglected himself. It is in the most malarial regions that the disease is most lightly regarded. We should emphasize the seriousness of the disease and the importance of its radical cure.

The complications of malaria which result from our failure to cure our patients are responsible for more deaths than the acute and pernicious forms. The manifestations of malaria, like those of syphilis, are protean, and no organ in the body is exempt from its ravages. Its most marked effect is seen on the renal organs[6] and the vascular system.[7] As a consequence, in malarial regions, the general death-rate is high and the mortality from nephritis and the various forms of paralysis is inordinately increased.

While there is certainly no relationship between malaria and syphilis, and the etiology, histology and pathology of the two diseases are widely and essentially different, yet many of the clinical manifestations are analogous. I realize that it is an "odious comparison," but it is made to emphasize the importance of the prolonged treatment of malaria.

Malaria and syphilis are general or systemic diseases, the organisms and their toxins circulating in the blood; both are inoculable; they have a definite period of incubation; in the secondary stage of syphilis there may be a fever of a remittent type (I saw a case of syphilis in the secondary stage, with daily rise of fever to 103 to 105 F., in which a clinical diagnosis of typhoid or malaria was made, but the laboratory proved it to be syphilis); there may be *skin manifestations in malaria*;[8] the tendency to chronicity is marked in both, as well as the proneness to involvement of many different organs; there may be prolonged periods of latency in malaria as in syphilis; no two diseases produce more nearly similar or more serious effects on the vascular system and renal organs; malaria is sometimes a cause of ulcerative keratitis,[9] optic neuritis, the acute psychoses,[10] sclerosis of the cord,[11] and even progressive paralysis;[12] in both diseases we have drugs which are almost specific in their action, but in order to get the best results treatment in both diseases must be begun early and continued for a long period.

Relapses, which result directly from our failure to cure our patients, may occur as recrudescences of the fever soon after acute symptoms, as exacerbations during the chronic course of the disease, or as distinct attacks during latency. Reinfections are usually relapses or recurrences.

Celli[13] regards a relapse in malaria as the recurrence of symptoms at any time within one year from July 1. Reinfections occur after one year. Undoubtedly relapses have been observed several years after infection, and reinfections may occur in less than a year, but Celli's rule is a safe one to follow. If we adopt this rule and keep records of our cases we shall find how few of our malarial patients we radically cure.

The world owes a debt of gratitude to Manson for his self-sacrificing work in studying malaria, and he is rightly regarded as one of our greatest authorities on the disease; yet even he did not cure the disease in himself when first infected. He allowed himself to be inoculated by infected anophelines on Sept. 10, 1900, and had a relapse on May 30, 1901.[14] Authentic cases of relapse after three years of latency have been reported.[15]

There would be but little chronic malaria if the acute cases were cured, but there are to-day probably two or three million persons in the United States who are harboring malarial parasites. Headaches, neuralgias, neuritis,[10] gastric disturbances and acute diarrhea are among the most frequent symptoms of the chronic or "masked" forms. Indeed, malaria may simulate almost any disease. Craig[16] reported fourteen cases of malaria which had been diagnosed as pulmonary tuberculosis.

TREATMENT

All authorities agree that quinin is almost a specific in malaria, when treatment is begun early and continued long enough to eradicate the parasite from the system completely, though there are differences of opinion as to the time of administration, the dosage, and duration of treatment.

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[3] Harris, Seale: Prevention of Malaria, The Journal A. M. A., Oct. 9, 1909, p. 1162.

[4] Woldert, A.: Malarial Fever, Its Expense to the People of Texas, Tr. Med. Assn. Texas, 1904, p. 37.

[5] Koch: Ztschr. f. Hyg., May 22, 1903.

[6] Moore, J. F.: Nephritis in Malaria, Am. Med., Dec. 28, 1901.

[7] Marchiafava and Bignami: Twentieth Century Practice of Medicine, William Wood & Company, New York, 1900.

[8] Reissman: Am. Med., March 22, 1902.

[9] Ellett, E. C.: Ophth. Rec., March, 1899.

[10] Bondurant, E. D.: Unreported Cases, Mobile, Ala.

[11] Spiller: Am. Jour. Med. Sc., December, 1900.

[12] Marandon de Montel: Rev. de méd., Nov. 10, 1900.

[13] Celli: La malaria secondo le nuovo ricerche, Rome.

[14] Manson: Brit. Med. Jour., July 13, 1901.

[15] Ziemann: Mense's Handbuch der Tropen-Krankheiten, Leipzig, 1906.

[16] Craig: Med. Rec., New York, Feb. 15, 1902.

Given a patient in a hospital where his symptoms can be watched, and with competent microscopists who can make repeated daily examinations of the blood, the rule "no parasites, no quinin" is best; but, practically speaking, nine-tenths of the physicians, in the rural districts where malaria abounds, have not microscopes, or the time to make blood examinations; therefore the diagnosis must be made from the symptoms and quinin administered at once. In malarial districts it is a good rule, when in doubt, to give quinin and watch for symptoms of other diseases. Quinin does but little harm in any disease, and it may do a great deal of good in eliminating malaria, which may complicate and make more serious any other disease.

The microscope is not always a criterion as to chronic malaria, because undoubtedly the disease does exist without the presence of parasites in the peripheral circulation. Now, however, that we have, in most states, laboratories connected with our state boards of health, where examination of blood is made free, and many private laboratories, where specimens may be examined for a small fee, the physician who is not equipped with a microscope should carry a few slides at all times and get a specimen of blood from cases of suspected malaria immediately before beginning the administration of quinin. He can get a report in two or three days, by telegram in twenty-four hours, if the symptoms are urgent. The few doses of quinin given before the report is received cannot injure the patient, and if the parasites are present the drug should be continued until a cure is effected.

There are differences of opinion as to the most favorable time of the day to administer the quinin. Torti's, also called the Roman, method of giving one large dose, 15 or 20 grains, several hours before the expected paroxysm, based on the theory that the best effect of the quinin is obtained during sporulation, when the youngest forms are free in the blood-stream, has many followers in the South. Some of the older physicians still follow Sydenham's method of giving one or more large doses during the remission or intermission of the fever, when the drug is less apt to produce nausea or other discomfort. In my opinion the best method, that employed by Gorgas, Deaderick,[17] Craig,[18] Rogers[19] and other authorities, and the method which I have employed for fifteen years, is to keep the patient continuously under the influence of quinin, by giving him small doses every four hours, both day and night, with perhaps an extra dose about four hours before the expected paroxysm.

In the tertian and quartan forms 3 or 4 grains every four hours is sufficient, but in the more resistant estivo-autumnal variety 5 grains every four hours will be required. This dosage should be kept up for three or four days after the fever has subsided; then half the quantity should be given for two weeks. I do not believe that there is ever any occasion for giving more than 30 grains of quinin a day, and the very large doses are regarded by some authorities as positively dangerous.

In the acute and severe estivo-autumnal fevers the quinin may have to be kept up in maximum doses (30 grains daily) for several weeks, because the crescents, or gametes, are very resistant to quinin. In 1904 I reported a case of a negro girl, aged 14, who had crescents in her blood after the administration of 4 grains of quinin, in solution, every four hours for twelve days.[20] Darling, of the Canal Zone, in the Section on Practice of Medicine last year reported a number of cases in which gametes remained in the blood from two weeks to twenty-five days in spite of the daily administration of 30 grains of quinin.[21] Craig has also made extensive studies of the gametes in the peripheral circulation for varying periods of time after the use of quinin.[22]

In the acute cases of all types of malaria it is important for the patient to remain in bed for several days, because undoubtedly the best effect is obtained from quinin while the patient is at rest.

How long should the quinin be continued to attain a radical cure? Deaderick[17] says: "A few days' treatment with quinin no more cures malaria than does a few weeks' rubbing with mercury cure syphilis." He continues the quinin in 15-grain doses on two successive days of each week for two or three months. Craig, Rogers and other well-known authors also advise a modification of Koch's method.

In Italy small daily doses (6 grains) are given for three months after the acute symptoms have subsided, just as it is given to entire communities for the prophylaxis of the disease.[23] No doubt the prophylactic doses effect cures in many chronic cases, since in some localities the disease has been almost entirely eradicated and in five years the Italian death-rate from malaria has been reduced three-fifths (Thayer).

Ross[24] says: "To extirpate the parasite in a patient demands four months' assiduous cinchonization," and I believe that this is the safest rule to follow.

Thayer advises the small daily dose (6 grains) rather than the large intermittent doses. My experience has been that the small daily doses (3 grains night and morning) are efficient and are better borne than the large doses repeated at intervals of several days. I have also found that the memory test of giving quinin on certain days of the week or month is too severe for malarial patients, and they frequently give it up in disgust, while by taking it two or three times a day they form the quinin habit and will keep up the drug for even longer periods than is desired.

PROPHYLAXIS

It is not my intention to suggest any less vigilance in destroying anopheles mosquitoes and their breeding-places, and I would urge that those measures be employed to the fullest extent possible. I do maintain, however, that the most important and the most practical measure, at this time, in the crusade against malaria, is the radical cure of those harboring the parasites, because every patient cured means one less focus of infection. We should remember that there are malaria carriers as well as typhoid carriers, and that one is as dangerous to the community as the other. We should not forget that the patient with the parasites of malaria in his blood may infect mosquitoes and transmit the disease to others, just as in yellow fever, and that malaria may be as serious a disease as yellow fever.

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[17] Deaderick: A Practical Study of Malaria, W. B. Saunders Co., 1909, p. 366.

[18] Craig: The Malarial Fevers, William Wood & Company, 1909, p. 377.

[19] Leonard, Rogers: Fevers in the Tropics, Oxford University Press, 1909, p. 234.

[20] Harris, Seale: Therap. Gaz., Jan. 15, 1904.

[21] Darling: Tr. Section on Pract. Med. A. M. A., 1909.

[22] Craig, Charles F.: The Sexual Forms of the Malarial Plasmodia Occurring in the Blood of Man, Arch. Int. Med., April 15, 1910, p. 325.

[23] Thayer: The Prophylaxis of Malaria, Jour. Southern Med. Assn., November, 1909.

[24] Ross: Allbutt's System of Medicine, p. 285.

I believe that we should at once institute a campaign against malaria. It offers the most brilliant results of any of the public health problems now confronting us.[25] A campaign of education should be begun with the medical profession, because physicians as a class, and particularly those residing in malarial regions, do not appreciate the seriousness of malaria, or the ease with which it may be eradicated. The public should be educated by means of popular addresses and literature on the subject should be placed in the hands of every one residing in malarial districts. Malaria, being both infectious and contagious, should be classed as among the reportable diseases, and the state and county boards of health should lead in the fight. Municipalities, counties and states should be called on to furnish money to purchase quinin to cure the indigent sufferers from malaria and to destroy the anophelines and their breeding-places. Philanthropists should be urged to aid in this fight against one of the greatest enemies to mankind. Money spent in eradicating malaria will yield greater returns than any other philanthropy.

It is no idle dream to hope that the blot of malaria may be erased from the fair name of our Southland and from the Mississippi and Missouri valleys, where the disease is most prevalent. Our government has given us an example of what may be accomplished even in the tropics. Gorgas,[26] with the resources of our great country to aid him, when he applied the knowledge of the mosquito transmission of disease and eradicated yellow fever and malaria from Havana and the Canal Zone, made conquests which should be regarded as among the greatest in the history of the world, victories that mean more for the welfare of nations than have ever been achieved in war.

ABSTRACT OF DISCUSSION

Dr. Charles MacLellan, Chicago: In my opinion the theory of the anopheles being the only carrier of malaria is wrong; malaria is sometimes found in northern latitudes where there are no anopheles. I remember, while in the Orkney Islands, being called to see a sick man, suffering from a severe attack of malaria, and in that region mosquitoes are unknown. Of course the gnat, of the same genus, exists in the British Isles. A second case in a man who had never been off the island came to my knowledge. Of course, we know that the anopheles is the great carrier of malaria, but there must be a first cause in the mosquito region.

With regard to the method of treatment, the administration of quinin in capsule or powder, is not an efficient manner of getting at the disease for its eradication. I believe the best method of administering this agent is in a solution of sulphuric acid. I have in mind one patient who gave a history of malaria, having been ill over a week and who had taken from 6 to 10 grains of quinin in capsule 3 times a day, without result; on giving him 2 grains of quinin 3 times a day, of the solution just mentioned, he escaped the chill on the second day and it did not return.

Dr. Arnold Traubitz, Neelysville, Mo.: I live in a district where every patient who goes to a physician's office is supposed to have malaria, and, having treated many of them with success, I cannot agree entirely with the method of treatment just outlined. Giving quinin 3 times a day for 3, 4 or 5 months is wrong; the patients cannot stand this treatment because of the resulting gastric disturbances. My method of treatment of the malaria that shows itself every other day, or every third day, consists in giving 4 or 5 hours before the expected attack, in one dose, from 25 to 30 grains of quinin; I give this about 4 or 5 hours before the chill is expected. Even with such a dosage, often I do not get the results I expected. I have given as much as 60 grains at one time. I find then that the patient always misses the next chill. It should be remembered, however, that the chill cannot be broken on the same day that the quinin is administered. Some patients cannot stand quinin every 4 hours. The main thing in the treatment of this disease is elimination; the stomach must be in proper condition to eliminate and cause a proper action of the gall-bladder; otherwise patients must be kept on quinin indefinitely, a procedure which they cannot stand. The long-continued use of quinin is unnecessary. In treating malaria, the digestive system should at first be placed in a receptive condition for the specific; after the administration of the quinin the annihilated bacteria should be excreted from the system.

Dr. W. E. Chapman, Sheboygan, Mich.: In 1902, I served as contract surgeon in the Philippines, and was called to treat many cases of malaria. In one very stubborn case, running over a period of several weeks, I kept increasing the dose in capsules until 70 grains were taken daily, vacillating in my diagnosis between malaria and typhoid fever, as the quinin did not influence the fever, and at last being assured of my diagnosis, I dissolved 150 grains of sulphate of quinin in a weak solution of hydrochloric acid, and gave it to the patient in 4½ hours. The next morning the man was free from fever; he had a beautiful eruption and was very deaf, but for the following 3 months, while he was under my care, he had no more chills or fever.

Dr. I. J. Wolf, Kansas City, Mo.: One thing to remember, and one that Dr. Harris laid stress on, was that malaria may assume the picture of almost any organic disease we know or can name. I remember one case of intermittent pneumonia which was due to the malarial parasite. I have in mind also another case in which the malarial parasite was responsible for an acute attack of enterocolitis in a baby during the summer months. The question at first arose: Was the trouble due to a faulty diet? I had just read an article on malaria in children and I suspected that something of this nature was the trouble. An examination of the blood showed that it was swarming with malarial parasites. The proper administration of quinin brought an end to this attack of enterocolitis. I do not believe that the treatment of malaria differs in any way from the treatment of any other disease. One should never have a stereotyped method of treatment of this, or any other, disease. One physician spoke of giving enormous doses of quinin, while another referred to the giving of small doses. Whether the dose of quinin should be large or small depends on the patient who is to receive the remedy. It is very important that the question of the total eradication of the disease should be borne in mind, as well as the immediate cure. One should not be satisfied with the production of the latent stage—but should be satisfied only with cure. Thousands of dollars have been spent on the eradication of the mosquito; if a fractional part of this money had been spent on the cure of the patient much good could have been attained. Without a malarial patient, the mosquito could not be a conveyer of this disease.

Dr. Vernon Blythe, Paducah, Ky.: One thing that has not been sufficiently discussed is the difficulty of diagnosis of malaria from certain other fevers, especially typhoid. I am of the opinion that the giving of quinin in typhoid, which is done so much, does harm. I think that when a definite quantity of quinin has been given to a patient suspected of having malaria, and in those cases in which there is a question in diagnosis between malaria and typhoid, and when the quinin has had little if any effect on the temperature, the amount should be cut down to the minimum. The use of quinin in typhoid I believe to be distinctly harmful, especially to the circulatory and nervous systems. This drug has little effect on the temperature of typhoid, and I wish to enter a protest against its use in treatment of this disease.

Dr. S. P. Child, Kansas City: As Dr. Harris has stated, there is great confusion at times and great difficulty in making a positive diagnosis between malaria and typhoid because of the absence of findings in the peripheral circulation. Physicians in Kansas City get many cases of malaria from Missouri towns and elsewhere; these places have many mosquitoes; a large number of cases appear in children and these have proved to be mainly of the estivo-autumnal type. Some cases, in which the frequent examination of the blood has shown the malarial parasites, have previously been diagnosed as pernicious anemia. In a period of six months at the Mercy Hospital in Kansas City, a hospital for children, we have had 7 cases of malaria, diagnosed by the blood findings, with one death. There was one case of typhoid fever during this period. Among these 7 cases there were 3 of the estivo-autumnal type, and the blood findings were suggestive of pernicious anemia. It was found that small and repeated doses of quinin by mouth would not cause a destruction of the organisms; therefore, we resorted to hypodermic medication of a combination of urea and quinin hydrochlorate; in every instance, as was shown by the result, we were justified in resorting to regular and systematic hypodermic medication. Only in 2 instances were large doses required and then we gave up to 12 grains every 2 hours hypodermically, in the gluteal muscles. In no case did we produce true cinchonism. These patients should be watched for several months before it is announced that a positive cure has been obtained.

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[25] Harris, Seale: Some Problems in Medicine which Affect the Prosperity of the South, Jour. Southern Med. Assn., April, 1909.

[26] Gorgas, W. C.: Malaria in the Tropics, The Journal A. M. A., May 12, 1906, p. 1416; Ann. Rep. Dept. of Sanitation, Isthmian Canal Commission, 1908, Government Printing Office, Washington.

DR. C. C. BASS, New Orleans: In my section of the country we see malaria every month and every year; the disease there appears in two varieties. I believe that there is an impression among almost all the physicians practicing in that section of the country, that of all the specifics in medicine, one that is as nearly a specific as any is quinin in treatment of malaria. A second impression that prevails is that in every patient who has malaria to such an extent as to give symptoms the plasmodium can be demonstrated in the blood by the use of the microscope.

DR. JOSEPH H. PRATT, Boston: Many of the conditions accompanying malarial infection should not be confused with the infection itself. Various diseases of the nervous system are frequently attributed to malaria on insufficient evidence. I recently saw a typical case of migraine in a patient from Illinois who had been treated for years for chronic malaria. A physician whom she consulted in Boston concurred in the diagnosis and on examination of her blood reported that it was "swarming with parasites." This patient, now 30 years of age, has not had chills or fever since childhood. When I examined her she was not anemic and the spleen could not be felt. There were no malarial parasites in the blood. Certainly a medical man must be thoroughly imbued with the false idea that all sorts of nervous disturbances may be the manifestations of malarial infection to regard for a period of ten years a case of migraine as one of malaria in a patient who did not present a single symptom that was characteristic of the latter disease. It is a common error for the inexperienced man to mistake malarial parasites for blood platelets in stained specimens. There is no doubt, that even at present, many physicians in all parts of the country mistake typhoid, tuberculosis, and septic conditions for malaria. Many base their diagnosis of malaria solely on the presence of chills and fever. I remember a striking case in which the error was not discovered until revealed by autopsy. The chart was typical of malarial fever. The paroxysms, consisting of chills, fever, and sweating recurred regularly. Large doses of quinin had been given and although the fever did not yield, the physician in charge held to his diagnosis of malaria. Autopsy showed a purulent thrombus which filled the portal vein. Such experiences as these teach two lessons. 1. We should awake to the truth, so clearly stated by Osler, Craig and others, that a fever which does not yield to small, repeated doses of quinin properly administered with the patient confined to his bed, is not malaria. 2. Blood examinations are of no value unless made by a competent person.

DR. G. C. SMITH, Boston: The idea of a man from Boston speaking on the subject of malaria seems strange, especially as there is so little of the disease in Massachusetts. I know how prevalent the disease is in the middle west and south, but we in the New England states do encounter an occasional case We have some cases imported from the west and south, and some patients have appeared here who reported that they were cured of malaria. It has been my fortune to see many such cases in consultation. I can corroborate the remarks of Dr. Pratt. During the past year I distinctly remember 3 cases of pyelitis of chronic form which had been diagnosed as malaria, and 2 patients with suppurative disease of the gall-bladder which had been treated with quinin, under which the chills and fever had subsided. The patients were supposed to be cured of the malaria. The attacks came and went. There was a repetition of the administration of quinin and always with the same results—temporary disappearance of the chills and fever. Of course the patients did not improve because of the quinin they took. I believe that there are so many suppurative affections which are liable to be misinterpreted as malaria, that this point should be emphasized.

DR. J. A. WITHERSPOON, Nashville, Tenn.: I rise to insist on a never-ceasing effort on the part of the physician to teach people how to rid themselves of this fell destroyer. Notwithstanding the fact that our brothers in Boston may find cases in which errors in diagnosis have been made, such as pyelitis and infected gall-bladders, if they would only visit the delta of the Mississippi River they would have more respect for the old-fashioned malaria of which Dr. Harris has spoken. I will even go farther and say that we realize the mistakes that are made, and that blood counts are necessary, but from my own personal observation I believe that there is no better class of men who can handle malaria in general than those men who practice medicine in the south where this disease is so prevalent. It is a mistake to say that down there the diagnosis is made largely on hearsay and without proper examination. There was a time when, all over the country, the physician looked at the patient's' tongue and felt of the pulse and made a diagnosis; that is not true today in my section of the country. In spite of the statements made by Osler, Pratt and others that if a fever does not yield after administration of a few doses of quinin it is not malarial, I wish to state that no more false statement was ever made in the Mississippi Valley than that; it certainly is not true. I agree with Dr. Harris that the early disappearance of the malarial plasmodium from the peripheral circulation in the latent cases of the disease does not mean that they are gone entirely from the circulation; one may repeatedly examine the blood and not find them; but they are still to be found in the deep-seated organs, lying there dormant, especially in the spleen and other organs. It requires several months of continuous treatment to eradicate the disease in such cases. It seems to be almost impossible to eradicate malaria of latent form if such patients are allowed to be up and around. We are up against a problem that costs not millions of dollars only, but hundreds of lives throughout the country because the disease is not properly treated in the latent stages.

DR. C. SHATTINGER, St. Louis: The question in mistaken diagnosis from Boston is interesting, but I should like to bring up a reverse condition, and relate a case which occurred in Kentucky where malaria is so prevalent, and where physicians might be supposed to be familiar with the disease. This patient, a woman, suffered for a long period of time and it was believed that she had some ovarian or uterine disease, and hysterectomy was decided on. By accident she happened to fall into my hands. Examination of the blood revealed swarms of the plasmodia. In this case 35 grains of quinin were given every 24 hours and it was necessary to keep this up for a period of 10 days before the paroxysms ceased. This corroborates Dr. Witherspoon's announcement that we cannot control the disease always by the administration of 1, 2 or 3 large doses of quinin.

DR. R. ALEXANDER BATE, Louisville, Ky.: A point brought out by Dr. Harris that impressed me very much was the quiescence of malaria for a period of 3 years. I do not wish to question this statement, but I wish that Dr. Harris would tell us why such a statement should be sustained. It is believed that the malarial protozoon segments in the light; therefore, this accounts for the immunity sustained by some of the negro race. I can readily understand why the protozoa might remain in a quiescent state for a reasonable period of time. But how can Dr. Harris explain that reinfection did not take place and that there was not a relapse? How can he explain or exclude the possibility of reinfection? It was suggested by one speaker that the malarial protozoa are in the deeper structures, not so much in the peripheral circulation, and away from the light; but how can this be demonstrated?

It is of course beyond question that the mosquito is the active agent in the cause of malaria; but I think, with certain Italian observers, that the mosquito is not the only source of infection. In recent papers the statement has been made that we must eradicate the swamps before malaria can be eliminated from a district infected with this disease.

With regard to the periodicity of malaria, it should be remembered that there are many diseases of metabolism which show periodicity. Certain materials accumulate in the system unutil a period of toxicity is reached.

Dr. Arthur G. Bell, Dallas, Texas: A case in a blacksmith, weighing 250 pounds, in my district was diagnosed as hip-joint disease. He had been a confirmed invalid for several years, and simply directed the work at his shop. He told me that some physicians had diagnosed his case as rheumatism and that others had pronounced it hip-joint disease. One surgeon stated that the Y-ligament had been bound down by adhesions, and that nothing would give relief except an operation. I examined the man carefully. I decided that his facial expression indicated chronic malarial cachexia. He ridiculed the idea, giving no history of malarial complications. Nevertheless, I directed him to take 4 grains of quinin, 3 times daily, till an ounce had been taken. After this simple treatment had been continued for some time the trouble disappeared like magic. The ligaments soon assumed their normal actions. Frequently I have seen physicians who lived in the same state or county disputing vehemently whether it was right to give quinin in malarial hematuria or not. One says that if you give quinin in malarial hematuria the patient will die. The other says that if you don't give quinin the patient will die. Some communities would not tolerate a doctor if he gave quinin in such cases, and others would discredit a physician if he did not. The text-books agree no better than the practitioners. One says quinin. The other says no quinin. It is said, however, that in cases of malarial hematuria, in which there are red corpuscles in the urine, quinin is indicated whereas when there is hematin, or hemoglobin in the urine no quinin is safe. When I formerly took steps to stop the hemorrhage from the kidneys I usually signed an extra death certificate. I have not attempted to stop the hemorrhage from the kidneys in my late cases. I wish to call attention to the fact that in the disease called malarial hematuria there seem to lurk two distinct diseases—one demanding quinin and the other no quinin. Will some one make the differentiation?

Dr. Isaac Ivan Lemann, New Orleans: One cannot be sure of one's diagnosis of malaria without an examination of the blood for the plasmodium. This is a point that cannot be put too strongly. Dr. Harris is probably correct in looking on the incompletely treated patients as a reservoir for the further propagation of the disease. The plasmodia may be deep-seated in the internal organs, and not found in the peripheral circulation, but one can only determine that by aspirating, for instance, the spleen. Splenic puncture is relatively a rare procedure, and one which is not often justified. The real point I wish to make, however, is that in many of the cases of intermittent chills and fever the disease is not malaria at all; these might be the symptoms of a lot of other diseases.

Dr. B. W. Fontaine, Memphis, Tenn.: After an experience of ten years in a very malarial district it has become my rule to doubt the diagnosis of this disease, malaria, unless the parasite is demonstrated in the blood. After repeated search for the plasmodia in the blood, if I fail to find any, then I doubt the diagnosis of malaria.

Dr. J. A. Chilton, Van Buren, Mo.: My first experience with malaria was personal; I had it myself, and with ten years' experience in wrestling with this disease as a physician, I have come to have certain fixed ideas regarding it, founded on this experience. I believe that the disease becomes dormant, so to speak, and remains deep-seated in the system for months, and that it requires in many cases months to free the system from it, and to effect a certain cure. I have treated a great many patients who would obtain medicine enough to keep the chill off, and notwithstanding my advice to return for further treatment, would neglect the matter until another chill, or perhaps two, would send them back to me, usually some time for the fourteenth to the twenty-first day from the date of their first visit. I have had careless patients repeat this thing many times, thus demonstrating the necessity of continuous treatment. I wish to relate one case of interest. A young man, about 22 years old came to me for medicine to relieve his fever and headache temporarily. On inquiry and investigation I found him suffering from malarial chills, and he said that he had had them for about all his life, and almost constantly for the past two years and that he had "tried the doctors" till he was discouraged, and did not wish any treatment save to get temporary relief. This man's history, together with the clinical symptoms, were all that was necessary to establish a diagnosis. I succeeded in getting him sufficiently interested in his condition to agree to stay with the treatment for four months if necessary, which he did. After beginning treatment with quinin and other tonics as iron, etc., combined with sufficient elimination through the bowels, the man did not have another chill, and in two months the color came back to his cheeks, he regained his strength and was redeemed from the ravages of malaria; he returned to his work, that of a common laborer. This man was under constant treatment for three months. I relate this case to illustrate the necessity of constant treatment, continued for a period of months, in order to cure malaria, and my belief that the plasmodium will "hibernate," so to speak, in the spleen for a winter, and come forth in the spring hungry and "seeking whom he may devour," resulting in another attack of chills, unless the patient be given proper and continuous treatment.

Dr. T. J. Ragsdale, Lee's Summit, Mo.: I should like to relate the history of four cases of malaria seen by me 2 years ago. These patients were four young men who had been away from town but returned to it with malaria. They were treated about three weeks and the malaria disappeared. These young men were apparently well from September or October until the following April. When all four developed chills and fever again within a week or ten days of each other. After three months of appropriate treatment they were cured. In citing these cases I wish to call attention to the regularity with which they suffered relapses.

Dr. D. C. Watt, Little Rock, Ark.: I dislike to think that the feeling against the mosquito is waning; the eradication of the mosquito is possible. Those of us who live and practice in the malarial countries know perfectly well that people who are protected from the mosquito by screens, suffer less from malaria than those who are exposed to the mosquito. In the treatment of malaria I think the individual himself is very much neglected; we should treat the patient more than the disease; because if we understand the normal condition and abnormal relations, we will find that the plasmodia will not be in evidence when the condition is practically restored to the normal. In the south most of the people carry with them the plasmodia; but what I wish particularly to emphasize is that we must pay more attention to the treatment of the individual. In giving quinin, a certain amount of discretion must be used. When I am treating patients from August to October I use very little quinin excepting as a prophylactic. But in the earlier months I give full doses to effect. I am sure that quinin has been the cause of immediate death of some of my patients suffering from subacute malaria. We have to consider the matter of waste and repair. I believe that it is the patient more than the disease that should be considered.

Dr. A. H. Vandivert, St. Joseph, Mo.: The statements in regard to the diagnosis of malaria by an examination of the blood, and the finding of the plasmodia, are correct, for this is the scientific way; but in the larger percentage of the cases of malaria, the diagnosis will be made by other means than a blood examination. Frequently the diagnosis will be made on the symptomatology alone. We should be careful to differentiate between malaria, septic fevers and other forms of disease which cause periodical chills and fever. There is no doubt that the administration of quinin in proper doses, if properly assimilated, will eradicate the malarial poison. When giving quinin to the extent of ½ dram we are giving a sufficient amount to stop, temporarily at least, the malaria, or the malarial infection we come in contact with. If more than ½ dram of quinin is required it means that the quinin is not properly prepared, or that it is not the right preparation, and that the drug is not given in sufficient quantities. The question always is: Why is not the drug properly assimilated? If quinin is not taken up by the stomach, then it should be administered in some other way.

This whole question of malaria resolves itself, I believe, into the correct diagnosis by scientific means if possible, or otherwise by the clinical symptoms. Success in the treatment means the continuation of the treatment over a period of months, and looking to the proper assimilation of the agent which brings about the eradication of the malarial element from the system. This is the experience of most men who live in malarial districts and who are called on to treat this disease frequently. In my section of the country there is less malaria now than there was a few years ago; the draining of the swamps has caused a decrease in the number of cases Malaria was very prevalent before the days of the investigation of the blood for the plasmodium. We certainly have advanced very far in our knowledge of this disease.

Dr. A. Comings Griffith, Kansas City, Mo.: I want to call attention to one point brought out in the paper, the similarity of malaria and syphilis. Recently a patient was brought to me with a history of infection, with chills and fever. Examination of the blood revealed the presence of the malarial parasite. This patient, a man, was placed on quinin in small doses and the chills and fever disappeared. However, the enlargement of the spleen and liver did not disappear. The patient got along nicely, was up and about, and 6 months later had shown no recurrence of the trouble. He went south because of some specific trouble and there the specific lesion was found. The blood again was examined but no plasmodia were found. The patient had a well-marked systolic murmur and his condition pointed to chronic endocarditis. He died. At autopsy there was found that the diagnosis was a correct one, chronic infectious endocarditis. There still existed an enlargement of the spleen and the malarial parasite in the blood.

Dr. Seale Harris, Mobile, Ala.: Regarding the administration of quinin in malaria, the ordinary soft gelatin capsule is usually easily dissolved in the stomach, but to be certain of solution, it may be followed with dilute hydrochloric acid. Most patients object to taking quinin in solution. Gastric disturbances following the administration of quinin do not often occur when the doses are small, but frequently follow the large doses, i. e. fifteen grains. Dr. Chapman spoke of giving a patient 150 grains of quinin in one day. His patient did not die but I think it dangerous to give such large doses. Large doses will not cure malaria any quicker, or more certainly than will 30 grains a day in divided doses. The experiments of Rogers in the tropics proved this He gave as high as from 60 to 100 grains a day, but these large doses did not shorten the course of the disease any more than the 30 grains a day, and he found that the large doses were distinctly depressing.

Dr. Wolf mentioned a case of pneumonia supposed to result from malarial infection. Malaria may have been a complication but I do not think that the plasmodium can cause a true pneumonia. The presence of the parasite in the blood does not necessarily mean that the patient is not also suffering from other disease. Always look for something else. Dr. Bass's remarks regarding the frequent absence of the plasmodium in the peripheral circulation in chronic malaria I believe to be correct. Sometimes, however, we find the plasmodium in the blood of patients who give no history of having had chills, fever, or other acute manifestation of malaria. Dr. Pratt doubts that the malarial parasite causes neuralgia, neuritis, general paralysis and nephritis One of my colleagues Dr E D Bondurant, who is professor of neurology in the University of Alabama, has made frequent examinations of blood of patients suffering from these diseases and other nervous disorders. He states that in the majority of such patients coming from malarial districts, malaria is the causative factor and the symptoms yield to quinin. Dr. Bondurant also states that he has seen cases of the acute psychoses due to malaria. Manson has also called attention to neuralgias and neuritis of malarial origin.

With regard to the effect of malaria on the kidneys, I merely cite the articles by Marchiafava and Celli in the "Twentieth Century Practice of Medicine," edition of 1900. Many others have also called attention to the fact that malaria may cause nephritis. It is unquestionable that arteriosclerosis is much more common in malarial districts than elsewhere. I must take issue with Dr. Pratt's statement about the cases of fever that do not yield to quinin in 3 days not being malaria. Most of them are not, but some cases of malaria are very resistant to quinin. I must also differ with him in what he quoted Dr. Craig as saying. In the April *Archives of Internal Medicine*, Dr. Craig states that he found the parasite of malaria in the blood of a number of patients who had been taking quinin for varying periods of time, some of them longer than a week.

In 1903, in the *Therapeutic Gazette* I reported the case of a patient who had had quinin in solution in large doses for more than a week, yet the fever continued and crescents were *found in the blood* *Last year in this Section Dr. Darling* reported several cases in which the patients had been given 30 grains of quinin a day for from 2 to 3 weeks yet the crescent forms were not destroyed. We all must agree with Dr. Witherspoon in what he says regarding the crusade against malaria. This is certainly very important and should hold the attention of all.

In regard to my authority for the long periods of quiescence or latency in malaria, I refer to Deaderick's book on malaria. Dr. Bate also spoke of the immunity, or infrequency, of malaria in the negro race. I do not believe there is any greater fallacy with regard to the negroes than is contained in such a statement. The statistics for 1900 show that in proportion to population three times as many negroes as whites died from malaria. The negroes certainly have malaria as much as do the whites but possibly not in so severe a form. I do not believe that there is any such thing as immunity to malaria. I agree with Dr. Lemann that a blood examination, whenever possible, should be made in every case of suspected malaria; but there are thousands of physicians all over this country who do not possess a microscope and yet who in nine-tenths of the cases are able to make a correct diagnosis of malaria. This is especially true in malarial districts. However, one should bear in mind that if a patient residing in a malarial district has a chill, it is not necessarily due to malaria; it may be due to a number of other causes.

The real *and important point* which *I desire to emphasize* is this: If you do not question your diagnosis of malaria, give the patient quinin at once and keep on giving him quinin until he is radically cured. It has been proved that malaria can be absolutely eradicated from malarial localities by the use of quinin alone. Koch advanced this theory ten years ago, and his plan was carried out on some islands off the coast of Africa. In less than two years, by administering quinin the disease was practically eradicated from them. In Italy and in southern Austria the same results were obtained. The most important point to remember in prophylaxis, is to cure malarial patients. Cure them. It takes several months to do this. But if you do not cure them they will be carriers of the infection from one year to another.

Differential Diagnosis Between Lichen Planus and Syphilis—The glans, penis and vulva may be affected with lichen planus, but as this is usually associated with lichen planus in other or more typical situations, such as the forearms and legs, it seldom leads to any error in diagnosis. It must be borne in mind that syphilis may occur in a patient already suffering from psoriasis or lichen planus, and when this happens the character of the non specific eruption is modified.—C. F. Marshall, in the *Practitioner*.

DIETARY STUDIES OF UNDERNOURISHED SCHOOL CHILDREN IN NEW YORK CITY*

E. MATHER SILL, M.D.

Attending Physician at the Good Samaritan Dispensary, Children's Department; Lecturer in Diseases of Children at the New York Polyclinic Medical School and Hospital

NEW YORK

The average person selects the different food materials in the market with very little knowledge of their actual nourishment value. When the income of the family is so limited that every cent must be made to go as far as possible, which is true of the average family living in the "poor" quarters of our great cities, then it is evident that ignorance of food values must mean much unnecessary expense, and perhaps suffering to those who can ill afford it.

My previous studies of 1,200 malnourished school children and the wide-spread interest shown as a result of my article on that subject have prompted me to further and deeper studies along this line, the result of which I now lay before you.

In order to make these dietary studies I have followed the plan of Atwater, since that seems to be the most accurate. Thus careful and accurate account was kept of the kinds, amounts, composition and cost of all food materials eaten during ten days, which was the period of investigation, and to insure accuracy the period should not be less. From this the cost, nutrients, and fuel value per man per day were computed in cents, grams and calories; the composition of each material used as shown by analysis, and the amounts of the different nutritive ingredients were determined. An account was kept of all the meals taken by each member of the family, as well as visitors or boarders, should there be any during this period of investigation.

The factors used in calculating the meals consumed in these dietary studies, were those commonly recognized as being the standard and were taken from Atwater's latest work, namely:

A man at hard muscular work requires 1.2 the food of a man at moderately active work.

A man with light muscular work and a boy 15 to 16 years old require 0.9 the food of a man at moderately active work.

A man at sedentary occupation, a woman at moderately active work, a boy 13 to 14, and a girl 15 to 16 years old require 0.8 the food of a man at moderately active muscular work.

A woman at light work, a boy 12 or girl 13 to 14 years old require 0.7 the food of a man at moderately active muscular work.

A boy 10 to 11 and a girl 10 to 12 years old require 0.6 the food of a man at moderately active muscular work.

A child 6 to 9 years old requires 0.5 the food of a man at moderately active muscular work. A child 2 to 5 years old requires 0.4 the food of a man at moderately active muscular work. A child under two years old requires 0.3 the food of a man at moderately active muscular work.

It is by the use of these factors that the number of meals actually taken by each member of the family is computed in terms equivalent to the number of meals for an adult man. Thus the total number of meals taken by the family is expressed in terms of meals per man, which, being divided by the number of meals per day, which is three, the number of days for one man is obtained. The total nutrients of the food eaten divided by the equivalent number of days for one man gives the amount per man per day.

DIETARY STANDARDS

Atwater reports studies of twelve laborers' families with ordinary work in large cities in the United States, in which the averages were per man per day, protein 101 gm., fat 116 gm., carbohydrates 344 gm., with a fuel value of 2,810 calories, which is an insufficient diet, according to the standards.

In eleven poor families in New York City the averages of the food actually eaten were protein 93 gm., fat 95 gm., carbohydrates 407 gm., and fuel value 2,845 calories.

In ten Russian Jewish families in Chicago the averages were, protein 137 gm., fat 103 gm., carbohydrates 418 gm., and fuel value 3,135 calories actually taken per man per day. These are enough quotations of previous studies to make our comparison.

The dietary standards as given by Atwater, and which have been pretty generally accepted, are as follows:

A man with hard muscular work, protein 175 gm. (or 0.39 pounds) with fat and carbohydrates in sufficient amounts to produce a fuel value of 5,500 calories.

A man with moderately active muscular work, protein 125 gm. with fat and carbohydrates enough to produce a fuel value of 4,150 calories.

A man with light to moderate muscular work, protein 112 gm. (or 0.28 pounds) with fat and carbohydrates enough to produce a fuel value of 3,400 calories.

A man at "sedentary" or a woman with moderately active work, protein 100 gm. (or 0.22 pounds) with fat and carbohydrates enough to produce a fuel value of 2,700 calories.

A woman at light or moderately muscular work, or a man without muscular exercise, protein 90 gm. (or 0.20 pounds) with fat and carbohydrates enough to produce a fuel value of 2,450 calories.

The average of twenty-eight dietaries studied by me showed the following per man per day (all the families having malnourished children):

Cost 19 cents, protein 95 gm., fat 68 gm., carbohydrates 407 gm., calories 2,614. These all did active or moderately active work.

Some six of these dietaries were up to or above the recognized standards, and therefore raised the general average considerably, but most of the dietaries were considerably below the ordinary standard, few being up to 3,000 per man per day, and some as low as 1,600 calories per man per day, with corresponding low fat, proteid, and carbohydrates, thus showing the undernourished condition due to lack of proper food.

In those families whose dietaries were up to or above the standard there were always other good and sufficient reasons for the malnutrition of the children, such as close quarters, overcrowding, late hours, infrequent bathing, eating candy between meals, and tuberculous infection, or convalescence from disease; also adenoids and enlarged tonsils in some cases, or organic disease.

Dietary studies of six fairly well-to-do families, at moderately active muscular work, showed averages per man per day as follows:

Cost 35 cents, protein 149 gm., fat 115 gm., carbohydrates 569 gm., and calories 3,884. Thus it will be seen these six families had about sufficient food and a fairly nourishing diet, and the adult members were well nourished. I could attribute the malnourished condition of the children only to the fact that they ate cheap candy between meals and thereby spoiled their appetites for nourishing food, lived in crowded quarters, sat up late at night, had organic disease, or were convalescing from disease. All of these were good reasons for their condition.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Another fact that has been most strongly impressed on my mind in making a record of each child's meals is that most of them ate very little in the way of breakfast and that the nutriment which they obtained from that meal was entirely inadequate for the demands of the growing body. The average breakfast of these children consists of tea or coffee and bread, and the consequence is that many are so hungry in school that they cannot concentrate their minds on study.

From a previous study of the meals of 210 malnourished children, I found that the following breakfasts were given.

Tea or coffee and bread....................	165
Cocoa or milk and bread....................	30
Milk or tea and egg........................	10
Coffee and oatmeal.........................	4
Nothing....................................	1

It is well known that breakfast is the important meal for the growing child.

Dr. H. M. Lechstrecker, of the New York State Board of Charities, examined 10,707 children in industrial schools of New York, with the following result: 998 had coffee or coffee and bread only for breakfast; 439 had no breakfast; 998 were anemic owing to lack of nourishment. Only 1,855, or 17.32 per cent., started the day with an adequate meal.

These studies were carried on among families of the poorer classes, living on the lower "East Side" of New York City, below Fourteenth Street, and east of Third Avenue and the Bowery. The families studied were representative of the people in this district and a large number of occupations were represented. Dietary studies were made from thirty-four families. Some were found to be shiftless and slovenly and took no interest in having a clean, comfortable home and setting an attractive table, while others, though ignorant, were willing and desirous of learning how they could improve their way of living and dietaries.

The range in total income per family was from an amount not sufficient to buy the absolute necessities of life, to an amount which should be ample for their needs and equal to that on which other families have been found to live comfortably. In no case among poorer families was there any food used which required care or work in preparing; whether this was from ignorance, lack of energy, opportunity, or convenience, it is hard to say; each cause no doubt was a factor to a certain extent, but ignorance seemed to be the principal reason.

The studies were carried on and the final results calculated according to the methods of Professor Atwater. Practically all this computing work has been done with a calculating machine, but even with this great aid the amount of detail work was considerable. The data obtained in each family studied was (1) the nationality, age, sex, occupation of each member of the family; (2) the income of the family; (3) the expenditures for rent, and food, gas, coal, etc.; (4) the kind, quantity and quality of food consumed; (5) the number of meals taken by each person present during the study. From these data, and the standard tables showing the composition and fuel value of the different food materials used, the quantities of nutrients and energy consumed per man per day were computed.

This made it possible to compare results with recognized standards and to judge whether the families were receiving proper nourishment, and whether they used good judgment and intelligence in the selection and purchase of food, and also to point out how a more nutritious diet in many cases could be purchased for the same amount of money or as nourishing a diet for less money.

In thirty-four such dietary studies made, twenty-eight dietaries were found to be deficient in protein, fat, and carbohydrates, with a corresponding low fuel value per man per day, and by multiplying these results by the factor used according to the ages of the undernourished child we obtain a diet correspondingly low for it.

The average of thirty-eight dietary studies of fairly well nourished families made in the United States of persons at moderate work, showed that these persons received 134 gm. of fat, 487 gm. of carbohydrates, in combination with 102 gm. of protein.

But the average of twenty-eight dietary studies that I have made gave protein 95 gm., fat 68 gm., carbohydrates 407 gm., thus showing great deficiency in all the food ingredients.

The average of these thirty-four dietary studies showed that 61 per cent. of the money spent was for animal foods, and 39 per cent. for vegetable foods, and about the same amount of protein was obtained from the animal as from the vegetable foods (slightly more from the vegetable foods. About five times as much fat was obtained from the animal as from the vegetable foods, or over 80 per cent. Over 70 per cent. of the carbohydrates came from the vegetable foods and more than twice the number of calories were obtained from the vegetable food as from the animal food. The carbohydrates furnished by the animal food came mostly from the milk.

In the studies of nearly 200 dietaries in families of widely varying circumstances in different parts of the country, it was found that the various animal foods made up about one-fifth of the total amount of food, and furnished more than six-tenths of the protein and nine-tenths of the fat used. My studies would indicate then that these thirty-four families with undernourished children got less than five-tenths of their protein from animal food and eight-tenths of their fat from the same source.

The fuel value of each food used in these dietaries was computed by means of values previously obtained from the studies of Professor Atwater, and others, by the use of the bomb and respiration calorimeters, which give for our common foodstuffs as ordinarily used in diets, the following general estimates for the energy furnished to the body by 1 gm. or 1 pound of each of the different classes of nutrients (calling an avoirdupois pound equal to 450 gm.); to be mathematically exact it should be 453.7 gm. to the pound. Protein, fuel value, 4 calories per gram, or 1,820 calories per pound. Fats, fuel value 9 calories per gram or 4,040 calories per pound. Carbohydrates fuel value, 4 calories per gram, or 1,820 calories per pound.

Thus it will be seen, having this data and the percentage of fat, protein and carbohydrates in each article of food as per analysis,[1] in order to ascertain the number of grams of protein, fat, and carbohydrates in each variety of food, one should find first the total number of grams weight by multiplying the weight of food by 450, the number of grams per pound avoirdupois, and multiply this result by the per cent. of protein, fat, and carbohydrates as shown by chemical analysis to be present in each article.

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[1] Atwater, W. O.: Principles of Nutrition and Nutritive Value of Food, Farmer's Bull. 142, U. S. Dept. Agric., corrected to April 5, 1906.

IMPROVEMENT OF DIETARIES BY KNOWLEDGE OF FOOD VALUES AND PROPER SELECTION OF FOOD

Almost all dietaries studied could have been improved both from a nutrient and an expense standpoint. In practically all a very small amount of the cereals, such as oatmeal, hominy, corn meal, rice, cracked wheat, etc., were purchased; also a very small fraction of the diet was made up of the dried legumes (beans, peas, lentils) although more nutriment (protein) can be obtained from these (properly cooked) for a given sum of money than from any other foods. It is well known that protein is the most important ingredient of food as it is the tissue builder, since it is the basis of muscle, bone and almost all the tissues and fluids of the body, hence its importance to the growing child. The cost of dried beans was 6 cents a pound and the cost of cereals by bulk the same.

The bulk of the nourishment in these diets was obtained from meat, milk, and bread and rolls. Baker's bread was used almost entirely, and the rolls used were purchased from the baker. This bread was rye and varied in price in the different families from 1.3 cents to 4 cents per pound and the rolls were made of white flour and were more expensive, costing about three times as much per pound as the bread. The majority of families paid from 3 to 3½ cents per pound for their bread. Those that paid less got stale bread, which is just as nutritious and healthful, and much more economical.

There is no doubt that it would have been better economy had they bought the flour and made their own bread at home if it could have been baked while the fire was being used for cooking other things, so that there would be no waste of fuel.

The milk used cost from 5 to 9 cents a quart, the cheaper grade being obtained from the groceries from the can in bulk, while the more expensive grade was delivered at the house in sealed quart bottles. For many of the poorer families more nourishment could have been obtained for the same amount of money by the purchase of skimmed milk.

The meat used by practically all the families was chuck and flank of beef, which cost them 16 to 18 cents a pound, and this was about as economical fresh meat as they could have purchased for its nutrient value; corned beef, however, might have been used part of the time to advantage with less cost.

Some of those in better circumstances bought round steak, and chicken, the chicken being an extremely expensive article of diet, for its food value, as it was purchased in small quantities, a small portion of a chicken such as a quarter at a time, which cost them anywhere from 15 to 28 cents a pound. Nearly all used fish in moderate quantities, principally carp, pike, buffalo fish, and salt herring.

One family received the same number of grams of protein, but six times as many grams of fat, and nearly as many calories from 2 pounds of herring at 15 cents as from 4 pounds of carp at 40 cents. Comparatively few eggs were used during the time of year these dietary studies were made, which was February, March and April, and those used cost from 36 to 40 cents a dozen, which made them an expensive food.

A few families bought a quart of strawberries every day at 10 cents, while others spent considerable for mineral water, and alcoholic drinks, all of which had very little food value, and were more or less injurious to health.

THE NEED OF MORE THOROUGH INSTRUCTION IN THE SCHOOLS

It is most important that the coming generation of young girls should be thoroughly educated as to the comparative nutritive value of the different foods; how these foods may be best cooked to make them nourishing and appetizing and the proper dietaries for different ages and occupations. This branch of their education has been heretofore much neglected and holds only an inferior place in their school curriculum. As the ultimate vocation of practically all is motherhood, it is far more important that they be educated in branches which will always be of value to them than that their minds be filled with languages and higher mathematics. The same girls who are now being educated will be future wives, mothers and housekeepers, and the knowledge gained in these matters will not only be of inestimable value to them in their families, in the economical purchase and cooking of food, and proper feeding of their children so that they will develop into strong and healthy men and women, but by their examples and modes of living they will educate their offspring along these lines of better living and gradually improve the nation.

It is well known that insufficient and poorly cooked food, coupled with meals uninvitingly and unattractively served, are the forerunners of alcoholism, drunkenness, crime and disease. Of 101 malnourished school children tested 55 per cent. gave a positive reaction to the von Pirquet tuberculin test.

By keeping our citizens and their children well nourished much will be done toward preventing the spread and ravages of the great white plague. The best way of accomplishing this, then, is by educating the children along these lines in the public schools. A more systematic study should be made of all the foods used as to their composition, best methods of cooking, amounts necessary and kinds best suited to different ages and occupations, and especially as to the importance of a well-cooked, wholesome and nourishing diet for the growing child. This should be gone into very thoroughly in the schools and more hours given to this most important branch.

Improvement must begin physically before any marked improvement can be made mentally, morally or spiritually, and physical development depends on the right nutrition of the body. There should be cooking classes conducted by competent cooks and teachers thoroughly trained and educated in cooking, food values, dietetics, economics, etc.

Dietaries for families with different incomes should be made out and the children taught to cook the articles suggested so that those with a limited income, as well as those better off, may be able intelligently to provide nourishing and appetizing food. It should not be lost sight of that some variety in the diet is important as thereby the stimulation of the appetite and the esthetic taste is increased, although great variety and choice of things out of season are not essential, which should be borne in mind when strict economy must be practiced.

No girl should be entitled to a graduation certificate or working papers until she has passed a rigid examination covering these subjects; and boys should be taught also the different ingredients of foods, and which foods are most healthful, nourishing and economical to buy, as well as the amount of protein, fat, and carbohydrates and number of calories necessary for proper nourishment at the different ages and in different occupations, the balanced diet and how best to obtain it. Children and adults alike should be taught that "the most healthful food is that which is best fitted to the uses."

"The cheapest food is that which furnishes the largest amount of nutriment at the least cost, and the best food is that which is both healthful and cheapest" (Atwater).

INSTRUCTION FOR MOTHERS

Passing from the education of the children we come to the immediate needs of providing a suitable, nourishing, and appetizing diet for the families. To accomplish this we must educate the mothers (for they purchase and cook the food for the family) along the same lines as those advocated in the schools. Something can be done by means of free lectures, free cooking classes, the distribution of pamphlets and other literature printed in different languages, setting forth in simple language the best, most nourishing, and most economical foods to purchase, and how to cook and serve these simple wholesome foods to make them inviting and appetizing, so that a small expenditure may return an ample nutriment value.

It is my belief, however, that only a small number of the poor and ignorant can be educated by these means; they must be reached in other ways; as, for instance, through large organizations such as the Woman's Christian Temperance Union, the Salvation Army, the American Federation of Labor, the Young Men's Christian Association, and others equally far-reaching. The United States government, and the press, through the large daily papers and other widely read, publications can most effectually reach the masses, since conditions found in New York City obtain in other large cities of America as well. A series of short articles should be written, setting forth in simple language proper diets, foods, proper methods of cooking, proper nutrition and the laws of growth, so that every wife, mother, and housekeeper might know and understand. There should be shown the high nutritive value of the cheaper foods as compared with those more costly, and methods of improved cooking. A great deal of food is badly cooked. If the cheaper foods well cooked replace the dearer kinds badly cooked, and the table be made attractive, there will result both saving in expense and happier and more contented home life. A great deal can be done in this respect by individual and group talks to mothers and children in the dispensaries, giving reasons for the foods and diets advocated. This method I have pursued for many years with most gratifying results.

REQUIREMENTS OF THE GROWING CHILD

For the proper development and growth of a child, Nature demands that certain fixed and unchangeable rules be followed and when these rules are disobeyed development and growth are impaired and often, as a result, disease follows.

A child is a young animal and should be considered as such, and should at least have as much care and attention shown it as is given to our young animals. Thousands, however, do not receive that care and attention on account of ignorance and neglect on the part of their parent.

Every child, to grow steadily in both mind and body and to be healthy must have nourishing, well-cooked food, suitable for its age and in sufficient quantities, given at regular intervals. Children are so active, and use up so much food in the shape of energy in that way, besides the food they need to develop the body and renew the wear and tear of the body, that they require a highly nutritious diet, containing a high percentage of protein, and this is especially important where the child is malnourished.

A child requires long and regular hours of sleep, and under the age of 12 years every child should be in bed at 7 or 8 p. m. Children under 7 or 8 years, especially if undernourished, should have a nap of an hour or two during the middle of the day. In my studies of over 210 malnourished school children under 10 years of age nearly 80 per cent. went to bed at 9 o'clock or later and the other 20 per cent. went to bed at 8 o'clock. The growing child to be well must be properly clothed, and have plenty of fresh air. Four or five hours out of doors every day are essential, and the sleeping rooms must be well ventilated at night.

Every normal child should have certain hours for play and certain hours for study. Long hours in ill-ventilated school rooms for young children do great harm by undermining the health of the child, which is far more important than the learning he gets. Cleanliness is an important factor in the well being and health of every child, and a tub bath should be given at least once a week in winter and oftener in summer.

If children are given a fair chance by adhering to these principles and giving them only what every child in the land has a right to demand, they will he hardy and strong and grow like little animals.

IMPROPER AND UNSCIENTIFIC FEEDING DIRECTLY AND INDIRECTLY THE CAUSE OF MANY AILMENTS

That improper and unscientific feeding of children from the time of birth to maturity is one of the most fruitful causes, both directly and indirectly, of disease, disability, incapacity for work, both mental and physical, loss of energy, susceptibility to contract and inability to withstand disease, everyone who has had wide experience must admit. This paper, however, deals with the child after the stage of babyhood has passed; in other words, the school child, up to the age of 10 or 12 years.

My experience has been in treating hundreds of these children that they contract disease much more easily and have less power of resistance than well-nourished children, and when disease is contracted it is apt to be more severe and prolonged. These children have so little reserve force to fall back on that when they have to undergo a severe illness, or operation, they are apt to succumb.

Ill-nourished children are especially subject to catarrhal affections of the nose and throat and to bronchitis; they also are very susceptible to cold, and easily affected by it. Many are affected with or subject to rheumatism, articular and muscular, and rheumatic sore throat; also not a few have chorea and rheumatic endocarditis.

All of these children are easily fatigued, both mentally and physically and have not the capacity for work that we see in well nourished children. Many of them have a tired, worn, inattentive look, complain of feeling tired and cannot concentrate their attention for any length of time, and their gaze is constantly wandering. They are anemic; their brains, as well as their bodies, are starved for want of nourishment. Many of them are put down in the schools as dullards, or backward children. In these cases good nourishing food is far more necessary for the stomach than books to feed the mind. It is an impossibility to concentrate the mind or to study on an empty stomach or when hungry.

In England, Scotland and France, nourishing meals are given in many of the schools at slight cost. Tickets are issued which provide the children with healthful, sufficient breakfasts. These tickets are previously purchased by the parents. Many meals are given free, and no distinction is made between those who pay for their meals and those who are unable to do so. The person who distributes these meals cannot possibly know whether the tickets were paid for or whether they were a free gift to the child. It has been amply proved that this does not make either parents or children paupers, so the fear of making paupers is no argument against adopting such helpful measures in our own country.

THE GREATEST FIELD FOR THE IMPROVEMENT OF THE POOR IN GREAT CITIES IS INSTRUCTION ALONG THESE LINES

The problem of nourishment which is so vital to the poor and the children of the poor, and the condition of our future population and nation at large so dependent on the way her children are nourished, that it should receive the attention of all.

We find by our studies that many poor families spend more than they can afford for food and yet receive insufficient nourishment by reason of their ignorance of food values. Attempt will be made in a general way to show how the expense for food can be reduced and yet a nourishing and wholesome diet procured. Fewer eggs and less butter can be used and the cheaper cuts of meat purchased and the difference thus saved can be expended for corn-meal, wheat-flour, cereals in bulk, rice, oatmeal, dried beans, potatoes, dried peas, lentils, whole milk and skimmed milk.

Where the income of the family is very small, meat can be replaced to a large extent by the above-named vegetables and cereals, which are much cheaper for their nutritive value. A large variety of fresh vegetables is not necessary or essential; they contain very little protein or energy, and where cost is considered one or two cheaper vegetables are sufficient. The cheaper cuts of beef contain more protein and fat and less waste than the more expensive cuts, and these with wheat-flour, bread, oatmeal, peas, and beans furnish abundant protein very cheaply.

The cheaper cuts of pork, flour, bread, sugar, corn-meal, potatoes, and rice furnish abundant fuel and energy in a cheap form.

It has been found that the cheapest source of protein is the cereals; next comes meat; the most expensive being fresh vegetables. Fancy high-priced fruits and those out of season should not be used.

The diet, as is well known, should vary somewhat with the climate and season of the year, and proper cooking of food is most important, making it more appetizing, more digestible, and more nourishing.

In the majority of families among the poorer classes the food is poorly chosen, poorly cooked and poorly served, and in not a few families there is considerable waste, especially among those who are fairly well to do.

A carefully selected diet is necessary to keep the balance so that there may be as nearly as possible the right amount of fat, protein, or carbohydrates. Extremes of diet should be avoided, and a mixed balanced diet of protein, carbohydrates, and fat maintained.

Emphasis should be laid on the necessity of setting a clean attractive table, having the meals eaten at regular hours, the whole family sitting down at the table together when the meal is warm.

If such standards can be thoroughly instilled into the minds of our poor people, more will have been accomplished toward the improvement of the present condition of the poor, and the betterment and proper and normal development of their children, and the laying of the foundation for future better living, growth, and well being, than by any other means. Indeed, along these lines is the greatest field for improvement of the poor in our great cities, and philanthropic movements should be directed towards this end.

Only those who see and treat thousands of these little undernourished, half-starved sufferers, as I do each year, can realize the appalling numbers, with their pitiful, emaciated, hungry faces, and no one but he who has become callous from many such sights, constantly working among them, can look on this tragical scene unmoved.

142 West Seventy-Eighth Street.

ABSTRACT OF DISCUSSION

Dr. William H. Welch, Baltimore: Dr. Sill has undoubtedly touched on the fundamental points. Those interested in the playground question in this country could render great aid in spreading information in regard to the matter of the food the child receives in its home. Dr. Sill spoke of the movement to furnish one meal, at least, in the schools, but objections have been urged to that on sociologic grounds. There is just one other point I want to mention, and that is the question of skim-milk. There is no question of the value of skim-milk, but the regulation of the sale of skim-milk is somewhat of a problem to the health officer. We cannot permit the sale of skim-milk when it is likely to be mistaken by the purchaser for full milk. That was brought up by the Maryland State Board of Health. They showed me packages of full milk and packages of skim milk of the same size and the same colored label, which could not possibly be distinguished, except that one was marked, "skim milk." That won't do at all. The sale of skim milk cannot be permitted under such conditions. The packages should be different or so labeled that there cannot be any possibility of mistake between the skim milk and the full milk.

Dr. N. R. Coleman, Columbus, Ohio: I must refer to the matter of giving children coffee. I cannot imagine anything more injurious for a child than to give it an article that will stimulate the vasomotor nerves, contract the blood-vessels and cut off nutrition, particularly the nutrition of the brain, that develops more rapidly than any other part of the body. I do not think any more deleterious habit could be practiced. It should be prohibited by law. Coffee, tea and cocoa, in my opinion, all have the same physiologic effect, but vary in degree. They should be spoken of in such a way, not only in this organization, but by the family physician, as to prevent, so far as possible, their use. Thirty years ago I called attention to this matter, and I have been preaching it ever since.

Dr. C. F. Wahrer, Fort Madison, Ia.: There are three great faults of diet: eating too much, not eating enough and eating the wrong kind of food. Over the first two we have not much control, but the physician does have some control over the third. An excellent wave of reform is going over the land in regard to the teaching of girls in the classes of domestic economy, the proper foods and the proper way to prepare them. The physician does not realize the importance of giving out an outline of what to eat. I have a patient whom I have been treating six years for nephritis, and though she is four years overdue in heaven, she is still alive. I have another one, a man who came to me for nose-bleed due to acute nephritis, and by regulating his diet he has not had another attack of nose-bleed. Another patient whom I had was a man who was asthmatic and could not go into a hay-field. It was all due to the horrible coffee he had been drinking. This man had been drinking coffee made by his wife, who never emptied the pot from one day to another, simply adding a little more coffee each time and letting it stand on the back of the stove to boil indefinitely. Her other cooking was equally skilful. I taught this woman how to make coffee, and her husband can now go into the hay-field without any difficulty. When a patient is told by a physician that he must diet, he goes on the theory that he must starve himself. The doctor does not tell him what to eat and what not to eat. And here we err. There are plenty of good books on the market on dietetics. Buy them, inform yourselves, then give your patients definite rules as to what to eat and what to avoid.

DR. C. G. KERLEY, New York: Those of us who have seen much of life among the poor people in any large city will understand the truth of Dr. Sill's statement regarding their ignorance. I have been in dispensary and hospital work for twenty-two years, and I am impressed with the fact that it is not that these people have not enough money, but that they have no idea of what constitutes nutritious food; and children are not fed with the idea of body-building, but merely of satisfying the appetite. The mothers are not lazy, they are untaught, and that is why they adopt a makeshift diet and do the thing that is easiest. If the physician takes the trouble to tell the mother what to do she does it. It is the primary function of the physician to instruct people how to live. That may be done through organizations of different kinds. At present there is an organization in New York City which will give a "child-welfare exhibit" in November. This exhibit will show educated people the conditions that exist among the poor, and it will be made attractive by object lessons and demonstrations in order to draw the poor and show them the results which may be achieved by right living. By that exhibit a great deal will be accomplished. It will inform the best class of people how the others live and let the ignorant be taught what constitutes proper living.

DR. S. W. KELLEY, Cleveland: Just a word or two on the subject of meals, etc., for the child in school. The plan has, of course, its different sides, the question of pauperizing, and all that. We began with free schools and then free books, in some places free shoes, then free meals, free doctors, free nurses, free dentists, and nearly every possible necessity for the child in school, until the tendency is to take the child out of the parents' hands too much and leave the parents nothing to do but to bring the child into the world and turn it over to the State for its maintenance as well as for its education.

I hope that this work as it is now carried on is only a transitional stage, made necessary by the influx of ignorant and careless parents. I do not believe in letting the child suffer in the meantime. It must not be allowed to starve or to go unclothed while getting its education, but the parents must be educated in their duty as parents, and the coming generation of parents must be better informed and more attentive in their duties as parents. I believe that ultimately the duty of school boards will be confined to education. I think that they are outside of their proper function in furnishing physicians, nurses, dentists and food to school children. That, if temporarily necessary, can be carried on by other organizations. Of course, I believe in medical inspection, but school boards should confine themselves to education, even if that includes the education of the parents in many ways. The school authorities can call to their aid and cooperation other authorities and organizations, such as the juvenile courts, the humane societies and the visiting nurses associations. For instance, in the matter of meals the social settlement workers can see that the child gets well-prepared meals at home. In illness or malnutrition the physicians can instruct nurses and the nurses working among the people can carry out these instructions.

DR. CHARLES A. CATTERMOLE, Boulder, Colo.: I want to explain a plan that is followed in the West. Dietetic errors are not so common in the West as among the people of the cities. The method we have adopted is to teach the girls in the high school the method of preparing food. They are taught cooking and buying of food in the market, and they cook and serve it in a proper way and get up a meal for the school board or a committee. In the cities children live on candies and prepared foods or go without breakfast.

MINERS' CONSUMPTION

OTTO V. HUFFMAN, M.D.
Medical Director of Children's Department, Miami Valley Hospital, and Physician-in-Chief to Fruit and Flower Mission, Children's Clinic, at Dayton, Ohio
CINCINNATI

Miners' consumption is a term used by miners to designate emaciation associated with anemia, general weakness, shortness of breath and occasionally palpitation. It is distinctly a layman's term for a general condition which may be due to a variety of causes. Whoever has observed a large number of miners must have been struck with the fact that the majority are pale and thin, and that they present the facies of chronic dyspepsia. A low state of health among miners is so prevalent and the use of the term "miners' consumption" so general that the subject merits the serious attention of the medical profession.

One does not have to look far for causes of ill health among the miners. Most mines and mining towns are without any sanitary measures whatsoever. In the mine urine and feces are disposed of promiscuously. The miner's home is situated anywhere. The outhouse is nearly always on the hillside above the home, and of course the well below. The women and children seem to thrive regardless of filthy practices, however, so we must look into the mine where the miner works for the direct cause of his condition.

According to the returns of the Twelfth Census there were 528,822 persons in continental United States reported as "miners" in the year 1900. Of this number 344,205 were reported as coal-miners; 52,024 as gold-miners and silver-miners, and 132,593 as miners not specified.

Analyses reported by the Technological Division of the U. S. Geological Survey show that the atmosphere at the face of the coal in the mine contains nearly always traces of ethane, methane and carbon monoxid gases. In the ordinary management of a mine means are taken to detect these gases before they are present in such a dangerous degree as to become inflammable. Efficient forced ventilation will usually remove the gases in sufficient quantity to minimize the danger of an explosion, but at the face of the coal where the miner is working, there will always be traces of the above-mentioned gases. The stronger the ventilation, the greater the tendency to exhaust in the rooms and blind entries, with greater liberation of gases from the newly made cuts, boreholes, and broken coal. In just what way the deleterious effects of ethane and methane are brought about when inhaled in small quantities over a long period we are not prepared to say, but we do know that carbon monoxid has the property of uniting with the hemoglobin of the red blood-corpuscles to form a rather stable compound, and that it is not readily replaced by oxygen.

In mines where dynamite and other nitroglycerin explosives are used we have another source of poison. In such explosives the nitroglycerin is mixed with inert matter. As a result of an explosion the inert matter is blown into the ore or coal. Adhering to the particles of this inert matter are small amounts of nitroglycerin which have been disseminated without entering into the detonation—being firmly fixed to the particles of the menstruum like so many tablets of nitroglycerin. Later this dust containing small amounts of nitroglycerin is inhaled during loading or shoveling, and, as every physician knows, the most efficacious way of administering nitroglycerin is to dissolve the triturate in the mouth. Another way of absorbing this poison is through the skin. Hence, these miners complain of headache, palpitation and nausea. Sometimes the men working on the tipple out in the open complain, too, as they breathe this dust when the cars or wagons are dumped.

During the past year Congress passed a law establishing a Bureau of Mines on account of the great number of miners killed or maimed annually as a result of a lack of safety devices. It may be opportune for the physicians to make some effort to better the condition of the miner from a hygienic and sanitary standpoint.

If in one of our naval ships we did not have elaborate systems of ventilation and did not make careful tests for the least increase in carbon dioxid gas for the several hundred men confined below—if we did not prohibit promiscuous expectorating, urinating and defecating, what a deplorable ship and state of health we should have!

It is no less important to have a clean, well-ventilated mine for the several hundred men working in it. The mere fact that the filth is hidden in darkness is no excuse for permitting a lack of sanitary precautions which we would not countenance one moment in the open light. We should provide our mines with better ventilation and more experts capable of analyzing the air.

Physicians in mining towns are without authority. It seems as though it might come within the province of this new bureau to make rules in regard to sanitary measures outside the mine as well as inside. Without chronic gas poisoning, typhoid, tuberculosis, hookworm, chronic nitroglycerin poisoning, and other preventable diseases, as well as fleas and chiggers, perhaps there would be no "miners' consumption."

Some physicians jump to the conclusion that the miner has general pulmonary fibrosis (anthracosis). As a matter of fact, the miner of to-day inhales very little dust, much less than the coal-handlers outside inhale, and he does not have evidences of catarrhal inflammation of the respiratory tract to the same degree as the men working in coal dust, who undoubtedly have anthracosis.

Other physicians account for the miner's pallor by the lack of sunshine, without considering real anemia. Many men have continued to work in dark but well-ventilated places other than mines for many years without developing anemia or marked pallor.

It is our duty to conduct some serious investigations in regard to the health of our miners. We should have more data at hand obtained from blood-examinations, post-mortem examinations, air analyses and other examinations which may give us exact information.

FATAL GUNSHOT WOUND

A. F. Johnson, M.D., Gresham, Neb.

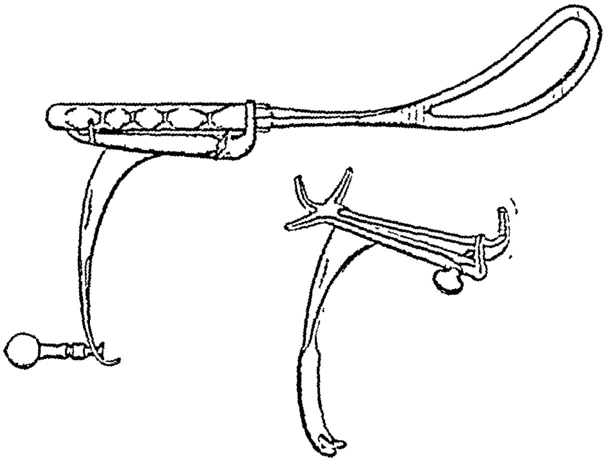
Oct. 21, 1910, I was called to see a boy about 10 years of age, who had been accidentally shot by a .44 caliber rifle, in the hands of a younger brother. The bullet entered the knee-joint from the anterior side, just internal to the patella, and passed completely through the joint, severing the popliteal artery. I arrived about ten minutes after the accident had occurred, but the loss of blood was so great, that the patient lived but a few minutes, never having regained consciousness. This emphasizes the necessity of instruction in the public schools regarding "first aid to the injured."

AXIS TRACTION HANDLE FOR OBSTETRIC FORCEPS

W. P. MEGRAIL, M.D.
WHEELING, W. VA.

The illustration shows a handle that can be readily and quickly attached to any obstetric forceps thereby making the latter a complete axis traction forceps, possessing the following advantages:

1. It is light, simple in construction, having only three parts, and very easy to apply to any forceps handle when axis traction is required.



Axis traction forceps. The figure at the top shows the handle attached to the ordinary obstetric forceps. Below on the right is a view of the handle detached.

2. It prevents the lock of the forceps from slipping and at the same time does not hinder the forceps blades from being opened or closed at the wish of the operator.
3. The handle alone is sufficient for most of the axis traction cases, but when a great amount of traction is required a "T" or cross-bar can be attached through the slot in the lower end of handle, making a larger grip.
4. This handle with the ordinary forceps that is found in the obstetric bag of every physician will prepare him successfully to terminate cases demanding a high forceps operation.

WARNING AGAINST THE INDIA-INK METHOD FOR THE SPIROCHÆTA PALLIDA*

JOSEPH H. BARACH, M.D.
PITTSBURG

Since recognition of the *Spirochæta pallida* as the probable cause of syphilis, now five and a half years ago, the staining methods, as has been said, are almost as numerous as the investigators who have studied it. Out of the many, there is one which has of late been especially prominent. I refer to the India-ink method first recommended by Burri,[1] and since by a number of other investigators.

This method, which consists in mixing the serum with diluted India ink on a glass slide and allowing it to dry in the air, is so easily carried out and requires so little technic, that its use, sooner or later, would have become quite universal. Recently, I used this method on a number of occasions, and I desire to relate my experience with it.

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* Presented at the clinical and pathologic meeting of the Allegheny County Medical Society, Oct. 18, 1910.

[1] Burri: Deutsch. med. Wchnschr., 1910, No. 38, p. 1762.

In one patient who had a typical case of syphilis, I found true spirochetes with the India-ink stain immediately. In another case, I saw the spirochetes first with the illuminated dark field and then with India ink. In neither of these specimens did I have occasion to make a prolonged search. My third use of this stain was in the case of an adult who presented an atypical case of varicella.

The diagnosis was later verified by Dr. B. A. Booth, physician to the Contagious Hospital.

Because of the possibility of syphilis in this case, I had taken a drop of serum from a vesicle and mixed it with India ink for examination. To my surprise I saw at first sight what I supposed were spirochetes. Closer scrutiny of these objects, however, made it dubious as to their actually being spirochetes. It then occurred to me that whatever they might be, before supposing them to have come from the serum of the vesicle, it would be well to examine the pure ink. This I did and was chagrined to find that the same wavy fibers were present.

I exhibited the pure ink specimens to a number of laboratory workers, and all agreed that the non-critical and inexperienced observer might easily mistake these for spirochetes.

The ink used was Higgins' India ink, which is said to have the largest sale, and therefore would be the most likely one offered to buyers. Since then Dr. George A. Holliday, who is especially interested in this subject, and I, have examined all the obtainable inks that are sold as India ink and the results are here given.

Description.—The figures seen in the dark granular field of the India ink specimens correspond in appearance to spirochetes, bacilli, cocci and streptococci. Some fields, especially in the Higgins ink, were literally filled with these bodies, and even if *Spirochætæ pallidæ* had been present, it would have been difficult to distinguish them. In most of the fibers the undulations are not large; some, however, especially in the darker fields in which the light refraction is greater, appear characteristic enough to be deceiving.

Inks Examined.—Higgins' Black India Ink: Three bottles all show long and short wavy fibers, and straight fibers resembling coarse bacilli; also structures resembling coarse streptococci.

Higgins' Violet Ink: Unsatisfactory. The ground is not sufficiently dark.

Higgins' Red Ink: Also unsatisfactory.

Hine (Paris) India Ink: In the dark areas of the field, the ink seems to crack as enameled surfaces do; and these cracks which appear as glistening wavy fibers against the black background may prove to be misleading. This ink contained no actual fibers.

Kallos' Indelible Drawing Ink: This is offered as an India ink although it is not a true India ink. In this I found streptococcus-like structures which at times appeared as wavy spirilla.

Collins' India Ink: This shows innumerable straight and wavy figures against the dark background that could be misleading.

Gunther: Wagner's India ink contains wavy fibers, some of which in length, diameter and undulations, bear a close resemblance to *Spirochæta pallida.*

A culture of Higgins' India ink on Loeffler's blood-mixture at the end of seventy-two hours was negative.

Since the accurate determination of the presence of *Spirochæta pallida* is at present already often complicated by the presence of *Spirochæta refringens*, to use the India inks would be to add one more source of error. The spirochete-like objects seen with these inks seem capable of assuming various shapes and sizes and while most of them, by the experienced microscopists, would not receive very serious consideration, some of the specimens that I have come across at a magnification of 1,300 diameters and higher, could delude even the expert.

I know a number of men who have occasion to diagnose many cases of syphilis, and who have been using the India-ink method for some time. These men do not consider themselves expert microscopists and they admitted that they may have made this error.

In the past, diagnosis of this disease has been based largely on full development of the clinical symptoms, but at present it is being frequently made on finding the spirochetes. For that reason, the greatest accuracy must be exercised, and the possibilities of error should be reduced to a minimum.

In consideration of the above findings, I offer this experience as a warning against the India-ink method by the non-expert and the general practitioner to whom it has been so strongly recommended.

4502 Fifth Avenue.

Therapeutics

HYGIENE OF THE MOUTH AND TEETH

The great importance of the preservation of the teeth is now recognized by all persons of intelligence. Crowding together of the teeth in the jaw and irregularities and depressions in the individual teeth are causes of dental caries. A direct and exciting cause is the lodgment of particles of food between the teeth and in the depressions on the surfaces. These particles of food undergo fermentation, with the production of bacteria and acids which attack and destroy the enamel of the teeth and then cause caries of the body of the teeth. Not all food is equally injurious in this way. It is chiefly the carbohydrates, the starches and sugars, which undergo this acid fermentation. The proteins, on the other hand, do not undergo the same acid fermentation and, consequently, they are less injurious.

It is evident, therefore, that in order to prevent dental caries it is necessary to prevent the stagnation or lodgment of the starches and sugars of the food in the mouth, and particularly in, on, or between the teeth.

The decomposition of the food lodged in the mouth commences very quickly, and therefore the rule of thoroughly brushing the teeth after each meal should be observed by every member of every household. The best instrument for this purpose is an old-fashioned tooth-brush made of hog's bristles. The bristles should not be so stiff as to injure the gums, and yet stiff enough to thoroughly remove all foreign matter from between the teeth. Neither a wooden (the best toothpick) nor a quill toothpick, nor silk floss, nor a napkin or towel, nor a rubber tooth-brush can accomplish this purpose nearly so well as a tooth-brush of bristles.

Even with the greatest care it is extremely difficult to keep the teeth entirely clean, and the majority of people are careless in the care of their teeth. Consequently, it is of great importance to arrange the food so as to diminish the tendency to the lodgment of the starches and sugars of the food between the teeth. These deposits are often caused by eating foods in a soft, moist, and mushy condition, and especially by eating them at the end of the meal. On the other hand, there is less tendency to this stagnation of the food around the teeth if the food eaten is dry, fibrous, and coarse, so as to require prolonged mastication. Incidentally this prolonged mastication of hard foods, in children, tends to strengthen the teeth and develop the jaws, so that they become larger and broader, affording more room for and less crowding of the teeth.

Of course the question of dietetics is one which can not be settled offhand. A food which is advantageous from one point of view may be most undesirable from another. To speak concretely, and having in mind only the prevention of dental caries, the foods to be eaten not too frequently are the soft, mushy farinaceous foods (especially if loaded with sugar), and candy. Raw fruits and salads, dry toast and stale bread with butter, vegetables, if cooked so that they are dry and require chewing, fish and meats of all kinds, including poultry, are better for the teeth. Even young children, after they have commenced to cut their teeth, should be given crusts of bread, or dry toast, and later other forms of solid food, which require chewing, to take the place of milk and gruels and various mushy foods on which many children are fed far longer than is beneficial for them. Other factors concerned in the production of caries of the teeth besides inadequate cleanliness and too soft food, are the general nutrition and the character of the internal secretions, *i. e.*, the secretion of the ductless glands. The teeth need certain inorganic substances properly metabolized to keep up their perfect health and growth. If these substances, probably largely phosphates, are insufficient, the teeth tend to decay. Such an insufficiency is probably always more or less present during pregnancy.

Another frequent cause of dental caries is the improper care or lack of care which the mouth and teeth receive during acute illness. A prolonged diet containing insufficient salts is also a predisposing cause of dental decay.

It is astonishing to what a degree the mouths of many patients are neglected, a neglect which contributes, in part at least, to the accumulation of a thick, dry coating on the tongue, and the thick, sticky, offensive masses of so-called sordes on the gums and in and between the teeth. When the patient is lying in bed, is being fed chiefly on milk and soft foods, and is not allowed to talk, there is much greater need than during health of systematic care of the mouth. The nurse should attend to this, and the physician should see that this part of her work is not neglected. In fact, except when a patient is moribund, the condition of the patient's mouth is an indication of the ability of the nurse. Frequent wiping of the teeth, gums, and tongue with a piece of cotton held in a pair of forceps, and saturated with an alkaline solution, containing 20 per cent. of glycerin, will contribute greatly to the comfort and welfare of the patient.

To whatever the severe illness is due, the greater the weakness, the higher the temperature, and the more abnormal the mental condition, the greater attention the mouth requires. The mouth should be rinsed several times a day with warm water to which has been added a little common salt, tincture of myrrh, alcohol, or a little cologne water, to stimulate the secretions. When there is a tendency to bleeding from the gums or lips, they should be rubbed twice a day with a soft cloth bearing powdered boric acid. In patients who are partially unconscious, the mouth should be examined several times daily. Little ulcerations should be treated with boric acid or a saturated potassium chlorate solution, or perhaps better with swabs soaked in peroxid of hydrogen solution. Fissures at the corners of the mouth will generally heal with boric acid and glycerin, boroglycerid or a pure petroleum fat. If the patient sleeps with the mouth open and the tongue tends to become dry, it should be frequently moistened with a 20 per cent. solution of glycerin and water. A drink of water should be offered the patient at least once an hour, and if the individual can take but a sip at a time, it should be offered even more frequently, unless he is quietly sleeping. A piece of ice covered with thin linen or gauze and applied to the mouth and tongue is often grateful to the patient.

The things to be remembered in the care of the mouth and teeth may be summed up as follows:

1. Theoretically water should follow the milk of bottle-fed babes.

2. A soft cloth should be thoroughly moistened with a mild alkaline wash and frequently applied over the first little teeth of the infant.

3. No candy, or at least but little, should be given to young children, and as soon as their teeth have erupted they should have the more crunchy or granular cereals, and not so much of the soft, gelatinous cereals.

4. The teeth should be regularly cleaned by a dentist, at least once in six months.

5. All cavities, even small, should be filled, at least with temporary filling, so that the first teeth may be preserved as long as possible in order to develop the jaws properly, so that the second teeth need not be crowded.

6. The teeth of children and adults should be thoroughly brushed at least twice a day, better three times, with a proper brush, and, at least in the morning, with a tooth powder that is not too soapy, and at night with an alkaline mouth wash.

7. All persons, growing children or adults, should have all the tartar that may become deposited cleaned from their teeth once in three months, and examinations of the teeth once in six months will disclose cavities before they have become large ones.

8. If the teeth tend to degenerate and cavities quickly form, the trouble is generally with the nutrition, and the person is often deficient on bone-forming salts. Such patients should receive lime salts, phosphates, glycerophosphates, and iron.

There is such a large choice of official preparations to meet this need that there is no necessity for prescribing proprietary preparations. In fact, the number of preparations of the United States Pharmacopeia and National Formulary is too large. They may be enumerated as:

Calcii hypophosphis, dose 0.50 gram (7½ grains).

Syrupus hypophosphitum, dose 1 to 2 teaspoonfuls:

This contains calcium hypophosphite, potassium hypophosphite, sodium hypophosphite, dilute hypophosphorus acid, sugar, tincture of fresh lemon-peel and water.

Syrupus hypophosphitum compositus, dose 1 to 2 teaspoonfuls:

This contains calcium hypophosphite, potassium hypophosphite, sodium hypophosphite, ferric hypophosphite, manganese hypophosphite, quinin, strychnin, sodium citrate, dilute hypophosphorus acid, sugar and water.

Elixir calcii hypophosphitis (N. F.).
Liquor hypophosphitum (N. F.).
Liquor hypophosphitum compositus (N. F.).
Syrupus calcii hypophosphitis (N. F.).
Syrupus calcii et sodii hypophosphitum (N. F.).
Syrupus phosphatum compositus (N. F.).
Elixir glycerophosphatum (N. F.).
Elixir hypophosphitum (N. F.).

Elixir hypophosphitum cum ferro (N. F.).
Elixir sodii hypophosphitis (N. F.).
The dose of any one of these is from 1 to 2 teaspoonfuls.

The best iron preparations for this purpose are: tinctura ferri chloridi, 1 or 2 drops in a wineglass of water or fresh lemonade, three times a day, after meals; ferrum reductum, 0.05 gram (1 grain), in capsule, three times a day, after meals,; ferri oxidum saccharatum (*Eisenzucker*), tablets, each 3 grains, 1 three times a day, after meals.

If the teeth are delayed in eruption and do not grow properly in young children, the dried extract of the thymus gland is of value. One of the tablets is given three times a day; it is best taken between meals, crushed with the teeth, and swallowed with water.

If the child as a whole does not grow well, even if not a cretin or in any way like a cretin, small doses of thyroid extract (glandulæ thyroideæ siccæ) in dose of 0.03 gram (½ grain) once a day, is of value, and this dose is sufficient.

In adults when the teeth tend to disintegrate perhaps the best treatment is the elixir of glycerophosphates of lime and soda, and it is also well to administer this preparation, or something similar, one or more times a day, to a pregnant woman, at least during the last months of pregnancy.

9. The care of the mouth during severe illness should be on the lines above described.

10. The proper care of the teeth will prevent Rigg's disease, one of the most troublesome and painful things that can happen to the jaws, meaning a retraction of the gums and exposure of the dentine of the teeth; proper care will also prevent that bane of older individuals, *viz.*, pyorrhea alveolitis.

11. The treatment of pyorrhea alveolitis must be strenuous and persistent. There is no excuse for its presence, and it can be eradicated. The treatment is persistent cleanliness and antisepsis, the same as in ozena. There is no excuse to-day for the horrible stench perpetrated by patients who suffer from ozena. The same is true of the nastiness of the breath of these pyorrhea patients, to say nothing of the danger to themselves of infection from germs harbored in the mouth. The treatment is a frequent use of a mouth wash of 1 part of peroxid of hydrogen solution to 4 or 5 parts of warm water, and then the persistent use of an antiseptic alkaline mouth wash and tooth paste or tooth powder after the peroxid of hydrogen has eradicated and removed the pus.

12. Before any serious operation is done, especially about the mouth, and when there is no emergency, the teeth of the patient should be cleansed, cavities at least temporarily filled, and pyorrhea alveolitis, if present, cured, or at least properly kept in subjection.

GOOD SENSE IN PRESCRIBING

℞	Gm.		
Acetanilidi	2		(ʒss)
Caffeinæ sodio-benzoatis		30	(gr. v)
Pulveris aromatici	1		(gr. xv)

M. div. in chart. No. VI.
Sig.: As directed.

The evident object of this prescription is either as an antipyretic or an analgesic, or possibly as a remedy for headache. If to reduce temperature or as an analgesic, it has been shown that caffein does not reduce the toxicity of acetanilid, but rather adds to it. If it is desired to render acetanilid less of a cardiac depressant, an alkali like sodium bicarbonate is the drug that should be combined with it, and not caffein. Therefore, the only excuse for caffein in combination with acetanilid, phenacetin or antipyrin is when these drugs are used to stop a headache, caffein being of benefit in some headaches.

The best caffein, unless an effervescing preparation is desired, is the citrated caffein of the Pharmacopeia, caffeina citrata. This contains 50 per cent. of caffein, while the caffeinæ sodio-benzoas of the National Formulary contains about 48 per cent. of caffein. The latter is a more expensive preparation and weaker than the citrated caffein, and the dose is nearly double that of the citrated caffein. There is no difference in the activity in equivalent doses of these two preparations of caffein. The main object of all prescribers should be to use the same simple drug to meet the same specific indication; to require that the Pharmacopeia shall be small, and that every drug be assayed, pure, and absolutely up to standard. This can not be expected and can not be accomplished if the Pharmacopeia represents a large number of preparations of each individual drug.

The official aromatic powder contains cinnamon, ginger, cardamom, and nutmeg. There could be little object in putting these aromatics into a stomach when an antipyretic action is desired of acetanilid. In other words, there is positively no reason for it in this particular prescription, although the dose is so small.

The directions above do not state how frequently the acetanilid is to be administered. The dose, about 0.33 gram (5 grains) is now considered very large, and certainly should not be repeated more than once in the same twenty-four hours. Two or even one grain of acetanilid, repeated two or three times at three-hour intervals, will act as satisfactorily and is much safer than a large dose of this drug.

As life is short and the age rapid, unnecessary Latin should not be used in a prescription; we have not time to write it. If the Latin word *"divide"* is used, it must be *"divide in"* followed by the accusative, divide into. It is much better to use the imperative word *"fac"* followed by the accusative, as "mix and make" so many powders. It is entirely unnecessary to say "No." or *"in numero"*: if so many pills or powders are ordered it must of necessity be *in numero,* therefore it is unnecessary to say so. If the metric system is to be used, it is absurd to order 6, 7, 8, 11, 12, or 13. If more than 1 or 2 are required, let the number ordered be 5, 10, 15, or 20; in other words, absolutely smooth and proper exponents of the decimal system.

If a simple prescription is required as an antipyretic, the following is better:

℞	Gm.			
Acetanilidi		50	or	gr. viiss
Sodii bicarbonatis	2			gr. xxx

M. et fac chartulas 5.
Sig.: A powder, with water, once in three hours, if needed.

Or, it may be ordered as follows:

℞	Gm.			
Acetanilidi		50	or	gr. viiss
Sodii bicarbonatis	1			gr. xv

M. et fac capsulas siccas 5.
Sig.: A capsule, with water, every 3 hours, if required.

If immediate, rapid action is desired, any capsule can be uncapped just before it is taken into the mouth.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, NOVEMBER 26, 1910

DYSPEPSIA AND THE PROPHYLAXIS OF CANCER OF THE STOMACH

The word "dyspepsia" used as a scientific term in its etymologic sense has long since been relegated to the realm of the obsolete. It is still applied occasionally, however, in a loose way to that miscellaneous aggregation of symptoms and distresses to which patients allude as "stomach trouble." It is becoming better understood from advances in the study of the chemistry of digestion and the secretions, as well as from the pathologic findings in the alimentary tract and the associated organs of digestion as revealed at operation and at autopsy, that most so-called stomach troubles have their seat or origin in the liver, the gall-bladder and ducts, the pancreas, the appendix, or in even more remote portions of the digestive tube, and that even real lesions in the stomach itself may be secondary to pathologic conditions far removed from that viscus. An understanding of this fact is important from the standpoint of prophylaxis, as well as from that of diagnosis and treatment. The futility will at once be seen of treating by measures directed to the stomach a hyperchlorhydria, for instance, that is due reflexly to a diseased appendix, or an obstruction of the pylorus due to spasm induced by a hypersecretion having its exciting cause in the gall-bladder. Gastro-enterostomies performed for the relief of such stomach conditions prove useless.

The influence of the appendix in the production of gastric disorder has been recognized and referred to in the writings of many authors. H. J. Paterson,[1] after seeing W. J. Mayo operate in two cases, removing the appendix when all the symptoms pointed to gastric or duodenal ulcer, which, however, was not present, began a study of these cases, and reports the histories of twenty-four patients operated on by him, each of whom had all the clinical symptoms of one or other of these types of ulcer. The removal of the diseased appendix in each instance relieved all the symptoms.

Fenwick[2] in a study of the clinical significance of gastric hypersecretion, states that he had noted that deaths from appendicitis occurred in patients with a peculiar type of hypersecretion, and the connection was suggested to him by Mayo. Fenwick even goes so far as to state that the character of the trouble in the appendix is indicated by the character of the gastric secretion, an active irritation being indicated by hypersecretion, while on the other hand, torsion, thickening, cystic dilatation or adhesion are followed after a time by a type of chronic gastritis characterized by flatulence, nausea, anorexia, excess of mucus and absence of free hydrochloric acid. Fenwick further says that a continuous flow of hyperacid gastric juice, reflexly produced by disease of some other organ—the appendix, pancreas, gall-bladder, tuberculosis or new growth of the cecum—always excites severe inflammation of the stomach and is liable to be followed by ulcer of that organ or the duodenum. It also sooner or later gives rise to spasm of the pylorus, causing pain and intermittent obstruction, which may lead to a diagnosis of cancer.

MacCarty[3] has studied the relation of the diseased appendix and gall-bladder to stomach trouble or dyspepsia, and finds that operations for gastric symptoms which have existed for years may reveal no lesion of the stomach other than aberrant secretion, but that one of the organs already named will be found in fault. Graham and Guthrie[4] cured eighty-nine out of 115 patients with gastric symptoms by appendectomy, and secured great or moderate improvement in twenty others. Cannon[5] by the injection of irritants into the large intestine produced retardation of the digestive juices, and Roger[6] produced erosions of the gastric mucosa by injections of beta-naphthol into the cecum.

Pilcher[7] in a study of 271 cases of achlorhydria gastrica hemorrhagica, a complex of gastric symptoms usually described as chronic gastritis, accompanied by hemorrhage, found that in 156 the onset seemed to bear an immediate and direct relation to various diseases. Thirty-eight of these followed infectious diseases, twelve accompanied circulatory disturbances, fourteen were post-operative, the operations having been done for various conditions, and twenty accompanied diseases of the ductless glands. In 100 of these patients operated on, the trouble in thirty-six was found to be due to appendicitis, in thirty-two to gall-bladder trouble, in sixteen to gall-bladder and pancreatic disease combined, in twelve to appendicitis and gall-bladder involvement combined, and in sixteen the stomach alone was found diseased. In twenty-four there was pylorospasm—in eighteen with appendicitis and in six with gall-bladder involvement.

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[1] Paterson, Herbert J.: Appendicular Gastralgia, or the Appendix as a Cause of Gastric Symptoms, Proc. Roy. Soc. Med., April, 1910, Surg. Sec., p. 187.

[2] Fenwick, W. Soltau: The Clinical Significance of Gastric Hypersecretion and Its Connection with Latent Disease of the Appendix, Proc. Roy. Soc. Med., April, 1910, Surg. Sect., p. 177.

[3] MacCarty, William Carpenter: Pathology and Clinical Significance of Stomach Ulcers, Surg., Gynec. and Obst., May, 1910, p. 449; The Pathology of the Gall-Bladder and Some Associated Lesions, Ann. Surg., May, 1910, p. 651.

[4] Graham, Christopher, and Guthrie, Donald: The Dyspeptic Type of Chronic Appendicitis, The Journal A. M. A., March 19, 1910, p. 960.

[5] Hedblom and Cannon: Am. Jour. Med. Sc., October, 1909; quoted by MacCarty.

[6] Roger: Arch. de méd. expér., 1906, xviii, 51; quoted by MacCarty.

[7] Pilcher, J. T.: The Journal A. M. A., Nov. 19, 1910, p. 1790.

In two cases ulcer of the stomach was found. Various other conditions were also present.

The achlorhydria, with its sequelæ, is attributed by Pilcher to reflex inhibition of secretion by disease elsewhere, the invasion of the stomach by bacteria, chiefly the streptococcus, producing irritation and erosion, with hemorrhage. Accompanying these erosions were found round-cell infiltration and engorgement of the capillaries.

Thus it will be seen that either hypersecretion or hyposecretion of hydrochloric acid may be due to the same remote causes in different patients, both leading to pylorospasm, irritation, erosion, infiltration and ulcer.

Finally, Wilson and MacCarty[8] have found in an examination of 230 cancers of the stomach that 71 per cent. had their origin in gastric ulcer.

If we accept the findings above noted, the conclusions to be drawn would be that dyspepsia or stomach troubles, functional or otherwise, in at least a number of instances have their origin or seat in some remote though functionally related structure or organ, reflexly producing hypersecretion or hyposecretion, with accompanying chemical or bacterial irritation, hemorrhage, ulcer and finally, perhaps, cancer; and that the treatment of stomach conditions would require a careful search for pathologic conditions in these more or less remote structures, looking to the stomach itself last, perhaps, for the original source of the trouble. Accepting the writers' premises, an important bearing of these facts would be that the prophylaxis of ulcer and cancer of the stomach would lie in the recognition and cure in their early stages of diseases of the appendix, gall-bladder and pancreas, as well as of other still more remote conditions that produce reflexly the symptoms recognized by the patient as stomach trouble or dyspepsia.

WILL THE WISCONSIN PURE FOOD LAW BE EMASCULATED?

Our readers will remember that last summer[1] their attention was called to the sane attitude of the Wisconsin health authorities on the subject of truthful labels on food products. The courts of that state have decided that the manufacturers of glucose cannot sell their product in Wisconsin under the euphemistic but misleading term, "corn syrup." To "get even" the glucose trust has boycotted that state and glucose cannot be had of the jobbing grocers of Wisconsin. These grocers, naturally, feel aggrieved and have passed resolutions against what they term an unwarranted loss of trade.

In an editorial entitled "Making Food Laws Ridiculous," *Leslie's Weekly* waxes indignant over what it calls "the foolish, restrictive legislation of Wisconsin," which requires that manufacturers shall tell the truth on the label. Says *Leslie's:*

> "It seems inconceivable that the people of Wisconsin should tolerate such an imposition. . . . We are not surprised to note that the Wisconsin press enters a bitter protest against any interference, under the guise of pure-food legislation, with the sale of wholesome and popular articles of food."

We, too, "are not surprised to note" that *Leslie's Weekly* looks on the restrictions due to requiring that the truth be told, as an "imposition." When we remember that the wide-spread fake "Viavi" was the subject of a "special article," and that the Alexander cancer cure[2] received a similar write-up in *Leslie's Weekly,* we naturally expect that publication to come to the defense of those who are attempting to discredit and destroy the pure food laws. Neither are we "surprised to note" that some Wisconsin newspapers are entering a protest! In the previous editorial we said:

> "For the past few years 'Karo'—a trade-marked name for glucose flavored with syrup—has been heavily advertised all over the country. We may now expect the advertising patronage of the glucose trust to be withdrawn from the state of Wisconsin in the hope that the newspapers of the state will bring pressure to bear on the state legislators to amend and emasculate the present law. It is to be hoped that Wisconsin newspapers in this instance will not sell their birthright of journalistic freedom for a paltry mess of advertising pottage."

The pottage will probably prove tempting in some cases, a consummation that the glucose manufacturers doubtless wish and expect. The cold facts of the case are that the profits to be made in selling glucose at real syrup prices are enormous—so great, that if no other question were involved, it would be, as the Wisconsin Supreme Court has decided, "a fraud to sell this article to the public under a name that induces the belief that it is procuring a syrup produced in the usual way . . ." These profits the glucose trust is willing to share with the newspapers through the medium of an advertising campaign, doubtless with the idea that few publications will tell unpleasant truths about the products whose advertisements they carry. It now remains to be seen whether the Wisconsin press will stand for the interests of their constituents at the expense of a loss of revenue. We are optimistic enough to believe that a state which has enacted, enforced and interpreted a statute such as the Wisconsin pure food law will not be found wanting in editors and publishers to defend it.

It is to be remembered that if the other states of the Union would insist on the Wisconsin standard of truthfulness in the labeling of food products, those manufacturers who fail to recognize honesty as a moral obligation would be brought to acknowledge it as a legal necessity.

In summing up its case against the Badger state's pure food law, *Leslie's Weekly* asks: "What's the matter with Wisconsin?" To answer this question in part, it might be said that there are three things, in particular:

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[8] Wilson and MacCarty: Am. Jour. Med. Sc., 1909, cxxxviii, 846.

[1] The Journal A. M. A., July 2, 1910, p. 33.

[2] See editorial published in The Journal A. M. A., July 6, 1907, p. 48.

First, Wisconsin has a pure food law that is designed to protect the public; second, it has a food commissioner who believes that this law should be enforced and who enforces it, and third, it has a supreme court which interprets the law in the interests of the public instead of for the benefit of the glucose trust. For all of which the state is to be complimented, the protests of *Leslie's Weekly,* the jobbing grocers, and a venal press, to the contrary, notwithstanding. "What's the matter with Wisconsin?" Wisconsin's all right!

SAND-FLY TRANSMISSION OF PELLAGRA

On behalf of the Pellagra Investigation Committee[1] Dr Sambon recently visited the Italian provinces of Bergano, Milan, Brescia, Padova, Rome and Perugia, and reports that in no instance in which he came in contact with the disease did he find evidence that maize was a causal factor. Endemic centers have existed in these provinces for over a hundred years. It does not occur in the towns, but only in certain parts of the rural districts where a sand-fly is found. No actual parasite was discovered but the geographical distribution and general resemblance of the disease to other protozoal infections pointed strongly to this sand-fly origin. A parallelism is suggested between pellagra and yellow fever, the parasite of which has never yet been discovered, though its insect-borne nature is no longer denied.

Dr. Sambon asserts that he proved to his satisfaction, (1) that the endemic centers of pellagra in Italy have remained the same since the disease was first described; (2) that the season of recurrence of pellagra coincides with the season of the appearance of the full-fledged sand-fly, even to the extent that if the spring is early or late, the sand-fly is early or late in appearing, and pellagra cases are correspondingly early or late in their appearance; (3) that in centers of pellagra infection whole families are attacked at times simultaneously; (4) that in non-pellagrous districts the disease never spreads to others with the advent of a pellagrin from a pellagrous district; (5) that in the case of a family which has moved from a pellagrous to a non-pellagrous district, the children born in the former are pellagrins, while the children born subsequent to removal to a non-pellagrous district do not develop the disease; (6) that the disease is not hereditary, although infants a few months old may become infected, especially if taken to the fields in pellagrous districts, where their mothers work during the season when sand-flies are in evidence; (7) that pellagra is not contagious, but is transmitted to each individual by an infected sand-fly.

The evidence on which Sambon supports his views is strong, but more will be required to satisfy the profession that this covers the whole case. For example, it is necessary to know whether or not the species of sand-fly which Sambon considered the conveyor of the infection, or one closely enough allied to it to be similarly credited with carrying the disease, exists in this country; and if so, whether or not the occurrence of pellagra here corresponds with the distribution of this sand-fly.

Current Comment

CONSISTENCY

Medical journals in their attitude toward the American Medical Association's campaign in the interests of cleaner and saner drug therapy may be grouped in one of three classes: first, those whose editors and publishers are not in sympathy with the propaganda for reform and whose editorial and advertising pages show that "anything goes" in the way of proprietary medicines; second, those whose editors and publishers both are in hearty accord with the fight for cleaner therapeutics and whose pages—editorial and advertising—reflect the attitude of the men in charge; third, those whose editors favor the propaganda for reform but whose business managers or publishers will have none of it. The inconsistency of this last class of journals does more harm to the cause so half-heartedly espoused than does the frank opposition of those whose attitude is avowedly unfriendly. An example of this journalistic anomaly is described in the current issue of *Colorado Medicine*—a medical journal, by the way, whose pages are clean from cover to cover. Says the editor:

> In the October number of the *Vermont Medical Monthly,* the official organ of [but not owned by] the state society, appears the annual address of the president, Dr. Walter B. Hayden. Reviewing the progress of medicine during the past decade, he enumerates among other things the great service of the Council on Pharmacy and Chemistry in exposing fraudulent proprietary medicines, quacks and fraudulent institutions.
>
> "It is unfortunate," he says, "that a credulous public does not recognize the faker, nor realize the danger of his nostrums; it is equally unfortunate that a careless profession does not expose the faker and reveal the worthlessness of his mixtures. . . . Can we not lend a hand in this modern crusade?"
>
> Dr. Hayden, we can and will. Sir, we are with you heart and soul. The medical profession of Colorado reaches out a hand, and pats you on the back. You can count on us to the last drop of blood. If there is one thing that stirs our nature to its vasty deeps it is a gallant battle for the right. But, stay! What is this that confronts us in your advertising columns? Why, no others than our old friends, Fellows' Syrup of Hypophosphites, California Fig Syrup, Gray's Glycerin Tonic Comp., Sal Hepatica, Ergoapiol, Glycothymoline, Katharmon, Hayden's Viburnum Compound and, last of all, Pepto-Mangan (Gude). We don't mind the smell, Dr. Hayden, but it hurts our eyes. If the good old puritanical New England conscience can stand such company in its battle for the right, count us out.

Well said, and timely. Hybrids are unlovely things, even in medical journals. One can at least admire the consistency—whatever may be thought of the morals—of those journals which frankly sell both advertising and editorial pages to the proprietary interests. But those publications which are "neither fish, flesh, nor fowl nor good red herring" are apt to inspire in one a feeling far removed from confidence or respect.

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[1] Nature, Oct. 17, 1910; and Policlinico, Rome, June 19, 1910, abstracted in THE JOURNAL, July 23, 1910, p. 361.

RED CROSS SEALS

Three years ago, the National Association for the Study and Prevention of Tuberculosis adopted the plan of raising money by the attractive method of selling Red Cross stamps during and preceding the Christmas holidays. The plan worked out beautifully and resulted in good financial returns. It was followed again last year, and will also be used this year. On account of the occasional inadvertent use of Red Cross stamps in place of postage stamps, the name has been changed this year to Red Cross seals.[1] The Post-Office Department has given permission for their sale in all post-offices, and they may be purchased in various other public places in every state.[2] For this season the ambition of the promoters is the sale of one hundred million seals. This ought to be accomplished, and will be if the public can be aroused; it is merely a mite for the many. The good done with the money raised by this means is only one of the benefits to be gained. A no less important good result will be the calling of the attention of millions to the fact that there is a great white plague, and, moreover, that tremendous efforts are being made to get rid of it. Thus, it will not only enlist the sympathy and support of those who are already interested in the movement, but also the interest and support of those who have never given the matter any thought whatever. It will fix the attention of the whole public on the work, and from an educational viewpoint will be of immense importance. To repeat, the idea is a beautiful and a noble one, and should be encouraged. Undoubtedly physicians will realize their opportunity, and will cooperate in every way in encouraging the sale of these Red Cross seals.

EDUCATION BY PICTURES

Lantern-slides, illustrating the anatomy and life-history of the hookworm and the methods of preventing hookworm disease, have been prepared[3] by the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service, to be loaned to medical societies, colleges, school-teachers' associations, women's clubs and other organizations interested in public health work. The moving-picture show, as a means of teaching the dangers of impure milk, has already been commented on.[4] The Edison Manufacturing Company, of Orange, N. J., has just announced the preparation of a new film of educational value, which has been produced in cooperation with the National Association for the Study and Prevention of Tuberculosis and the American National Red Cross. This film is entitled "The Red Cross Seal" and shows graphically the actual conditions that breed tuberculosis, the work of the district nurses, of the open-air camp, and of the Tuberculosis Association and the life of the tenement house district. The possibilities of such means of educating the public are practically unlimited. "Men are but children of a larger growth." Modern psychology has clearly demonstrated that the impression made by the picture is much more forcible and lasting than that produced by the spoken word or the printed page.

POLIOMYELITIS IN CUBA

The occurrence in 1909 of an epidemic of 140 cases of poliomyelitis in one province in Cuba, with smaller epidemics in others, has demonstrated that geographic situation is a factor of secondary importance in the distribution of the disease. In most descriptions of the affection it has been called a disease of temperate or cold climates, but the incidence of epidemics in Cuba shows that the tropics are not exempt. In a study of the epidemiology of the disease in Cuba, Lebredo and Recio[1] find that the special biologic conditions necessary for the life of the infectious agent are not modified in the tropics, and that it occurs in the same summer months as in the more northern countries, beginning in May or June, becoming intense in August and September, decreasing in October and becoming rare in November. The disease had not heretofore existed in epidemic form in Cuba, and the uniform manner of its appearance and evolution led Lebredo and Recio to conclude that all cases constituted a single epidemic group. A map of the affected district showed its special dissemination along the railroad line. In endeavoring to establish the origin of the epidemic the investigators were led to believe that since this epidemic followed so closely the extensive epidemic in the United States, in 1907 and 1908, particularly in New York City, with which port Cuba has extensive commercial and other relations, they were justified in assuming that the Cuban epidemic originated from that in the United States.

STREET ACCIDENTS IN LONDON

We in this country are reputed to hold life cheaply and to be more careless than Europeans in safeguarding life and limb in street traffic in large cities, in industrial establishments and on transportation systems. This may be true, but the fact must not be overlooked that street traffic in London, though admitted to be handled better than in any other large city, is far from being free from accidents. This is apparent from the statistical report of the London County Council. There it is stated that 17,000 persons were injured in 1908 by street accidents within the metropolitan police district, and that 326 were killed outright. Advances in civilization and multiplication of conveniences and luxuries have their accompanying penalties. Motor vehicles, including motorcycles, caused 6,300 of the accidents and 159 of the deaths, motorcycles being chargeable with two of the deaths. It will thus be seen that this country has no monopoly of reckless drivers of motor and other vehicles, and also that a certain number of accidents will inevitably happen in the crowded centers of population with their tremendous street traffic, despite the employment of almost any degree of human care and foresight.

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[1] The seal is illustrated in the department of General News in this issue.

[2] Seals may be obtained in quantities from all state Red Cross offices, from most state tuberculosis societies, or from the National Association for the Study and Prevention of Tuberculosis, 105 East Twenty-Second Street, New York.

[3] As further explained in General News, this issue.

[4] The Drama of Sanitation, THE JOURNAL A. M. A., Aug. 13, 1910, p. 602.

[1] Lebredo, M. G., and Recio, M.: Acute Anterior Poliomyelitis: Cuban Epidemic of 1909, Sanidad y Beneficencia, 1910, iv, 328.

Medical News

CALIFORNIA

Nurses Avert Panic.—The intrepidity and quick action on the part of the nurses of the Nauheim Hospital, Oakland, averted a panic, when the oil tank and water tower of the hospital were destroyed by fire recently. The patients were removed without casualty.

Hospital Association Election.—The board of directors of Santa Ana Hospital Association have organized and elected the following officers: president, Dr. Charles D. Ball; vice-president, J. M. Raugh; secretary, Dr. Howard S. Gordon, and member of the board of control, Dr. John Wehrly.

Care for Tuberculosis Patients.—A tract of 40 acres of the Tokayana ranch near Colfax has been purchased and will soon be occupied by a colony of tuberculosis patients. Forty cottages are being erected, and it is expected that 100 more will be built later on. This will be known as the Tate Colony and will be under the charge of Dr. Robert A. Peers, Colfax. ——The Supreme Court of the Independent Order of Foresters has purchased 40 acres of land in Lopez Canon near San Fernando as a site for a sanatorium for tuberculosis patients who are members of the order. It is expected the new institution will be ready for operation January 1.

Personal.—Dr. Henry D. Brusco, San Francisco, has been appointed a member of the board of health, vice Dr. Thomas B. Roche, resigned.——Dr. Oscar Stansbury, Chico, a member of the State Board of Health, has been granted a six-weeks' leave of absence, and will represent the board in making observations of the sanitary conditions in the Canal Zone and Cuba.——Dr. Charles H. Rowe has been appointed a member of the board of health of Oakland, vice Dr. Alonzo S. Larkey.——Dr. Chester W. Bryant, Redding, was seriously injured by being thrown from his carriage near Ingar recently. ——Dr. E. Jamieson, Grass Valley, announces his intention to retire.——In the case of Robert Thompson, alias James Grant, San Francisco, charged with the murder of Eva Swan by a criminal operation, the jury is said to have returned a verdict of murder in the second degree, November 4.

ILLINOIS

Personal.—Dr. William M. Harsha, Chicago, has been appointed a member of the surgical staff of St. Luke's Hospital. ——Dr. James W. DuComb, Beckemeyer, has been appointed a member of the board of pension examiners of Clinton County, vice Dr. Thomas E. Alsop, deceased.

State Board Convictions.—The secretary of the Illinois State Board of Health reports that Walter Vogel, a "chiropractor," was found guilty November 18, of practicing medicine without a license. The trial took place at Savanna before the Carroll County Circuit Court, and a fine of $200 was imposed. This is the third judgment against Vogel, making a total of $500 in fines assessed against him.——The secretary also reports the conviction on November 17, of Minnie Meyer, a fortune teller located at 2142 W. Harrison Street, Chicago, for practicing medicine without a license. This case was heard in the Municipal Court of Chicago and the evidence disclosed that the fortune teller had given medicine to women to produce abortions. The trial judge, Hon. John G. Scovel, instructed the attorney for the state board to call the attention of the state's attorney of Cook County to the evidence as submitted, as a basis for criminal prosecution.——Nathan Ginsburg, 1587 Milwaukee Avenue, Chicago, is also reported as having been convicted by a jury and fined $100 and costs, November 14, in the Municipal Court of Chicago, for practicing medicine without a license. This man took a short course at some "optical school" and received a diploma conferring on him the degree of "doctor of optics." The testimony showed that "he had administered medicine for 'nervousness' and had used a card styling himself 'Dr. M. Ginsburg, eyesight specialist and defractionist.'"

INDIANA

Prophylaxis Against Blindness.—Dr. George F. Keiper, Lafayette, chairman of the committee of the Indiana State Medical Association on Ophthalmia Neonatorum, advises that the note in The Journal, November 5, conveyed a wrong impression regarding the action of the committee. There was merely an informal meeting of three members to talk over matters that the chairman had in mind, and on which he sought advice. The committee is not yet ready to speak about the law, and will not be ready until the representatives of all schools of medicine have discussed the matter in joint meeting. The laws adopted by several states on this subject place no responsibility at all on the physician; the responsibility rests with the midwife or nurse to report to the health officer or legally qualified practitioner within six hours after a baby's eyes become sore, that the condition exists.

MARYLAND

Personal.—The Lonaconing Board of Trade has organized with Dr. James O. Bullock as president, and Dr. Henry M. Hodgson as vice-president.——Dr. Thomas W. Koon has been appointed city physician of Cumberland.

Society Meetings.—Wicomico County Medical Society, at its annual meeting, November 17, elected the following officers; president, Dr. Louis W. Morris; vice-president, Dr. J. McFadden Dick; secretary, Dr. Harry S. Wailes; treasurer, Dr. Harry C. Tull, all of Salisbury; censors, Drs. J. H. Lynch, Quantico; Harry C. Tull, Salisbury, and John M. Elderdice, Mardela Springs; delegate to the Medical and Chirurgical Faculty of Maryland, Dr. George W. Todd, Salisbury, and alternate, Dr. Lawrence C. Freeney, Pittsville.——Frederick County Medical Society has elected the following officers: president, Dr. Charles F. Goodell, Frederick; vice-presidents, Drs. Ira J. McCurdy, Frederick, and Morris A. Birely, Thurmont; secretary, Dr. Levin West, Brunswick; censor, Dr. Alvey J. Smith, Jefferson, and delegate to the State Medical Society, Dr. Thomas C. Routson, Buckeystown.

Baltimore

Personal.—Dr. Charles W. McElfresh is holding a physicians' conference at the University of Maryland Hospital every Thursday on the various aspects of diet.——Dr. J. Frederick Adams, while riding near his surburban home, was painfully injured by an accidental gunshot wound of the hip, inflicted by a careless hunter.

MICHIGAN

New Tuberculosis Infirmary.—The board of health of Grand Rapids has decided that the new diphtheria hospital shall be converted into an infirmary for the care of tuberculosis patients——The Chippewa County board of supervisors has appropriated $1,700 to establish a tuberculosis hospital.

New Harper Hospital.—Ground has been broken for the new six-story surgical building of the Harper Hospital, which is to cost $200,000 and will accommodate 200 patients. This is the first of the series of buildings of the new Harper Hospitals.

Court Decides Antituberculosis Dispute.—Judge Hosmer of the Circuit Court has decided that the incorporated society known as the Detroit Society for the Study and Prevention of Tuberculosis, must pay to the unincorporated society the $13,500 collected on "tag-day" and the books and records of the society.

Personal.—Dr. Harry W. Bradley, Saginaw, is reported to be critically ill with typhoid fever.——Dr. William S. Connery, Saginaw, coroner of Saginaw County, was thrown from his carriage, November 12, but was not seriously injured.——Dr. Oscar Le Seure, Detroit, underwent an operation at Grace Hospital, November 12.——Dr. William F. Hake, Grand Rapids, sustained painful injuries of the leg in an automobile accident, November 8.——Dr. William H. Marshall, Boyne City, has disposed of his practice and started for Europe.

The Prevalence of Small-Pox.—Serious conditions regarding small-pox appear to exist in northern Michigan, where an aggravated type of the disease is causing anxiety to the State Health Department and local health boards. As usual the unvaccinated are the sufferers. A serious outbreak of the hemorrhagic type is reported in Saginaw, where about 200 cases have thus far been reported. During October eighteen deaths occurred, and up to November 19, twenty deaths. The authorities are taking every precaution to control the disease, and at present only a few cases are developing, and these of mild type, as a result of compulsory vaccination and revaccination of the entire population, the quarantine of infected places, and the stoppage of trains at only one station in the city, where inspectors are placed to vaccinate and disinfect every individual leaving the city. A severe outbreak of the disease is reported from the Michigan Home for the Feeble Minded, Lapeer, where twenty-six cases and seven deaths have occurred. The home is strictly quarantined and a company of the National Guard of Michigan is stationed around the home to prevent the 150 employees, who are more or less panic stricken, from leaving. The condition is improving, the situation is being well-handled and no further trouble is anticipated.

Society Meetings.—At the annual meeting of the Ingham County Medical Society held in Lansing, November 8, Dr. Orrin H. Freeland, Mason, was elected president; Dr. Louis W. Toles, vice-president; and Dr. Samuel Osborn, Lansing, secretary-treasurer.——Schoolcraft County Medical Society, at its annual meeting, elected the following officers: president, Dr. Andrew Nelson, Manistique; vice-president, Dr. Samuel S. Hackwell, Blaney; and secretary-treasurer and delegate to the State Society, Dr. George M. Livingston, Manistique.——At the annual meeting of the Eaton County Medical Society, held at Charlotte, Dr. Clarence B. Wasson of Bellevue was elected president; Dr. Flavius J. Knight, Charlotte, vice-president; Dr. Arthur H. Burleson, Olivet, secretary-treasurer; and Dr. Philip H. Quick, Olivet, delegate to the State Society.——The Tri-County Medical Society, made up of physicians of Wexford, Missaukee and Kalkaska counties, organized at Cadillac, November 4, and elected the following officers: president, Dr. Victor F. Huntley, Manton; vice-president, Dr. Raphael Brodeur, Cadillac; secretary-treasurer, Dr. Wallace J. Smith, Cadillac; delegate to the State Medical Society, Dr. Sair C. Moore, Cadillac; and alternate, Dr. Wallace J. Smith, Cadillac.——Hillsdale County Medical Society, at its annual meeting held in Jonesville, elected the following officers: Dr. E. Arthur Martindale, Hillsdale, president; Dr. Malcolm Graham, Jonesville, vice-president; and Dr. Burt F. Green, Hillsdale, secretary-treasurer.

MISSOURI

Sanitary Fountains for Schools.—Fifty sanitary drinking fountains for the Springfield public schools will soon be installed.

New Building for Sanatorium.—A new building to cost $35,000 has been commenced at Mount Vernon Sanatorium for the treatment of tuberculosis.

State Conference of Charities.—The eleventh annual conference of State Charities and Corrections, in session at Chillicothe, November 10-12, decided on Kansas City as the place of meeting for next year, and elected Dr. Thomas Riley, St. Louis, president, and Dr. G. Wilse Robinson, Kansas City, vice-president.

Society Meets and Banquets.—At the annual meeting and banquet of Caldwell County Medical Society at Breckenridge, Dr. George S. Dowell, Braymer, was elected president; Dr. Oscar O. Meredith, Breckenridge, vice-president; Dr. George W. Goins, Breckenridge, secretary-treasurer (reelected), and Dr. William T. Lindley, Hamilton, delegate to the state association.

Banquet to Physician.—Dr. Thomas H. Doyle, St. Joseph, former mayor and now police commissioner, was the guest of honor at a complimentary dinner, November 7, by the St. Joseph-Buchanan-Andrew County Medical Society, the occasion being his seventieth birthday. Dr. Charles R. Woodson presided as toastmaster, and Dr. James W. Hedden, on behalf of the St. Joseph-Buchanan Andrew County Medical Society, presented Dr. Doyle with a loving cup.

Personal.—Dr. Thomas B. Holder, Ash Grove, was accidentally shot in the hip while hunting near Walnut Grove, November 9.——Dr. Walter M. Cross, Kansas City, has been reappointed city chemist.——Dr. Oliver C. Gebhart, St. Joseph, major in command of the Field Hospital Corps of the Missouri National Guard, has been detailed to inspect the medical property of the state.——Fire of unknown origin destroyed the office of Dr. William L. White, Springhill, November 1.

St. Louis

Hospital Sunday Fund.—The annual report of the St. Louis Hospital Saturday and Sunday Association shows that during the past year $46,469 was donated to the fund.

Opposes Closing of Dispensary.—Business men of South St. Louis appeared before the Hospital Board at the public hearing, November 1, and protested against the action of the board in closing the South Side Dispensary.

Hospital Staff.—The names of Drs. Bransford Lewis and Jesse S. Myer should have been given in the list of names of the Municipal Hospital staff which appeared in The Journal, November 5. Dr. George C. Crandall has been selected chairman of the visiting staff.——Dr. E. Lee Myers, senior physician of the City Hospital, has resigned.

Complete Addition to Sanatorium.—The west wing addition to the Sanatorium at the City Insane Asylum has been completed, and all insane patients housed in the infirmary have been transferred to the Sanatorium. The quarters vacated by the insane patients will be occupied by the poor patients, hitherto cared for at the Female Hospital, and the Female Hospital will be abandoned for the present.

Vaccination Resolutions.—At a special meeting, called for the purpose, October 28 and 29, the St. Louis Medical Society adopted the following resolutions:

> Whereas, There have recently appeared in several of the daily papers of this city, editorials and other articles decrying the practice of vaccination as useless, unscientific and dangerous, and
>
> Whereas, Such editorials or articles may do great harm unless promptly answered by the medical profession, therefore, be it
>
> *Resolved*, That the St. Louis Medical Society declares that vaccination, well and thoroughly done, absolutely prevents small-pox.
>
> *Resolved*, That the truth of this statement is absolutely established by facts and figures
>
> *Resolved*, That the rare accidents reported as following the procedure, however deplorable in themselves, are outweighed a hundredfold by the enormous benefits which vaccination has conferred on humanity.
>
> *Resolved*, That vaccination has, since its introduction 114 years ago, saved more lives than any other single measure known to science.
>
> *Resolved*, That the necessity of thorough vaccination of this community, and especially of its children, is as great to-day as ever.
>
> *Resolved*, That the secretary be instructed to furnish a copy of these resolutions to each of the daily papers of this city, with the request that they be published.

NEW JERSEY

New Site for Tuberculosis Hospital.—The hospital committee of the Morristown Antituberculosis Society has selected a site for its hospital property at Morris Plains. The property has been donated to the society by Frederick Burnham.

Donation to Day Camp.—David B. Mills, Montclair, has donated $800 to the Antituberculosis League of the Oranges, $500 of which is to be used for the fresh-air school, and the remainder for the maintenance of the day camp for children during the winter.

Personal.—Dr. Harry H. Sherk, Camden, was seriously injured in a collision, November 3, between his automobile and a trolley car.——Dr. Frank M. Dedaker, Philadelphia, has succeeded Dr. Harry C. Fish as resident physician at the Mercer Hospital, Trenton.——Dr. Francis K. MacMurrough, Jersey City, has moved his office to One Hundred and Forty-fifth Street and St. Nicholas Avenue, New York City.

Elect Officers.—The annual election of officers of the Washington County Medical Society resulted as follows: president, Dr. Frank P. McKinstry; vice-president, Dr. Charles M. Williams; recording secretary, Dr. Frederick J. LaRiew; corresponding secretary, Dr. Thomas S. Dedrick, all of Washington; treasurer, Dr. Edward H. Moore, Asbury; and trustees, Drs. Charles B. Smith and George C. Young, Washington, and Theodore B. Fulper, Junction.

Benefit by Open-Air Schools.—The pupils in attendance at the outdoor school opened last month by the Montclair Board of Education are already beginning to show improvement as the result of their studies in the open air. Some of the pupils have gained as much as a pound a week since the school has been in session, while only two of the twenty-two members have decreased in weight. The children who are unable to pay for transportation are furnished free transportation to the school and daily lunch is also provided.

Censure Physicians Who Leave Hospital.—The board of trustees of Mercy Hospital, Trenton, has passed resolutions holding Dr. Edward T. Craney, Philadelphia, and Harvey W. Lloyd, Shamokin, who summarily left the hospital, giving as a reason their inability to work under the superintendent, "highly censurable for their reprehensible, unprofessional and unethical conduct," and directing that the names of these individuals be entered on the minutes of the proceedings of the staff of the hospital as being recommended for dishonorable dismissal.

NEW YORK

Social Service Department Instituted.—A social service department has been instituted at the Buffalo General Hospital, in charge of Miss Lucia Stockton, who has spent several weeks in Boston becoming acquainted with the methods in use at the Massachusetts General Hospital.

Health Conference.—The tenth annual Health Conference of Sanitary Officers of the State of New York was held under the auspices of the New York State Department of Health in Buffalo, November 16 to 18. The chief subjects of discussion were "Public Health in the School," "Public Health in the Press," "The Health Department, Its Supreme Value to the People," and "Communicable Diseases." On the evening of November 17 a smoker was held at Hotel Iroquois.

New York City

Personal.—Dr. Travers R. Maxwell has been appointed assistant sanitary superintendent of Brooklyn, vice Dr. Alonzo Blauvelt.——Dr. David Edward Hoag has been elected lecturer on nervous and mental diseases in the New York Polyclinic Medical School and Hospital.

Municipal Milk Supply.—The New York Milk Committee will hold a conference December 2 and 3, to discuss more efficient ways of controlling the municipal milk supply in New York City. The work of the conference will be in four sections: "Milk Economics," "Milk Supply and Public Health," "Milk Standards," and "Milk Commissions." The meetings will be open to the public and the medical profession is invited to participate in the discussions. Information regarding the program will be furnished by Dr. Ira S. Wile, chairman of the conference committee, 230 W. 97th street.

Medical Sociology.—The preliminary announcement of the formation of the American Society of Medical Sociology has appeared. The object of the society is to study radically the questions of socio-medical nature, such as the need of a federal department of health; tuberculosis as an economic disease; whether there is any demonstrable relationship between the strain of our modern life and the increase of insanity; whether cancer is on the increase, and if so, what the probable etiologic factors are, etc. Dr. Abraham Jacobi is honorary president of the association, Dr. William J. Robinson, president, and Dr. A. C. Jacobson, secretary.

OHIO

Fraternity to Meet.—The fifteenth biennial convention of the Grand Chapter of the Nu Sigma Nu Medical Fraternity will open in Cleveland, November 26, with headquarters at the Hollenden.

District Society Meeting.—The seventh annual meeting of the Second Councilor District Medical Society was held in Springfield, October 25, and the following officers were elected: president, Dr. Charles L. Minor, Springfield; secretary, Dr. Henry D. Rinehart, Dayton; and treasurer, Dr. Pearl R. Madden, Xenia.

County Tuberculosis Sanatorium.—Plans are being prepared by the commissioners of Knox County for the construction of a building for the care and treatment of patients with tuberculosis. Under the new law, which goes into effect January 1, a separate building must be provided for tuberculosis patients at all county infirmaries.

Personal.—Dr. James R. Davis, Chardon, sailed for Europe November 2.——Dr. Sample B. McKerrihan has been appointed city physician of Portsmouth.——Dr. Frank E. Kitzmiller, Piqua, is ill at the Memorial Hospital.——Dr. James B. Ray, health officer of Portsmouth, has decided to retire from practice and will settle on his farm near Harrisonville.——Dr. Harry L. Connett, Dayton, has been appointed pathologist at the Athens State Hospital.——Dr. Noah Myers has been appointed a member of the board of health of Springfield, vice Dr. Ira E. Seward, resigned, to accept the position of health officer, made vacant by the resignation of Dr. Henry Baldwin.——Dr. William C. Gates, Bucyrus, was seriously injured in a collision between his automobile and an interurban car, November 5.——Dr. Frederick P. Minton, Toledo, who has been seriously ill with septicemia, is reported to be convalescent.——Drs. Warner Hopkins Tuckerman and William C. Tuckerman, Cleveland, have returned from abroad.

Cincinnati

Antispitting Ordinance Enforced.—During the last week twelve individuals were arrested by the sanitary police for violation of the antispitting ordinance.

Miami Alumni Meet.—At the annual meeting of the Miami Medical College Alumni Association the following officers were elected: president, Dr. William C. Harris; vice-presidents, Drs. Joseph E. Pirrung, William C. Herman, Frederick W. Lamb and Daniel J. Davies; and secretary-treasurer, Dr. C. J. Broeman.

Dandridge Memorial Meeting.—The Cincinnati Academy of Medicine devoted the evening of November 14 to a memorial to Dr. Nathaniel Pendleton Dandridge. The following addresses were made: "Dr. Dandridge as a Colleague," by Dr. Byron Stanton; "As a Friend," Dr. Dan Millikin, Hamilton; "As a Surgeon," Dr. John C. Oliver; "As an Executive," Dr. Asa B. Isham; "As a Staff Officer," Dr. B. Knox Rachford; "As a Teacher," Dr. Julius H. Eichberg, and "As an Adviser," Dr. Christian R. Holmes.

Personal.—Dr. Jacob L. Tuechter has been appointed clinic director of the Cincinnati Antituberculosis League. He began his work November 11, and is on duty every day from 12 to 2, and on Monday and Thursday evening from 7 to 8. He is assisted in his work by the following volunteer staff: Drs. William H. Strietmann, Charles E. Iliff, Arthur J. Light, Marcus E. Wilson, Oscar Berghausen, Edith Smith, J. Emmitt Fayen, Edw. D. Allgaier, John R. Meek and A. G. Huffmann.——Dr. Charles L. Bonifield has been appointed a member of the board of medical directors of the Cincinnati Hospital, vice Dr. N. Pendleton Dandridge.——Dr. Joseph W. Dodds, assistant health officer of Cincinnati, has resigned.——Dr. Edward H. Thompson, who was recently operated on for appendicitis, is reported to be convalescent.

Asks Injunction in Milk Case.—The Milk Commission of the Cincinnati Academy of Medicine is said to have filed suit in the Common Pleas Court to enjoin Charles I. West & Son from using parchment seals on their milk bottles and from advertising that they are selling certified and inspected milk. The commission claims that its object is the improvement of the milk supply in this city and that it has adopted two standards, "certified" and "inspected," which denote the amount of bacteria contained, and these labels are allowed only after the milk commission has made an inspection and passed on the condition of the dairies and cows and the method of handling milk, the expert work being in charge of the experts of the Bureau of Animal Industry of the federal Department of Agriculture. The commission claims that the defendant company has been using the labels and advertisements since October 1 last.

PENNSYLVANIA

Medical Library Started.—Dr. John S. Van Voorhis, Belle Vernon, the only living charter member of Fayette County Medical Society, has started a movement for the establishment of a society library by donating seventy volumes.

Hospital Reopened.—St. Margaret's Memorial Hospital, Pittsburg, which has been closed for several years, has been newly equipped and was opened for public inspection, October 1. The medical staff consists of Drs. Percival J. Eaton, Elwood B. Haworth, Sydney A. Chalfant, Evan W. Meredith, William C. White, William W. Blair, and William P. Barndollar.

Philadelphia

Pennsylvania Seniors to Edit a Medical Record.—The senior class of the medical department of the University of Pennsylvania will edit a medical record to be known as *Scope*.

Candy Men Attack Pure Food Statute.—Counsel representing twelve manufacturers, attacked the constitutionality of the Pennsylvania pure food act of May, 1909, in argument before Judges Buffington, Lanning and McPherson in United States Circuit Court. It was the complaint of the dairy and food commissioner Faust and his agent Harry P. Cassidy, that the defendants used sulphur dioxid. To this the candy manufacturers replied that sulphur dioxid is used in small quantities only, but is permitted in far greater quantities in molasses and dried fruits, therefore the act discriminates against the confectionery trade and is contrary to the constitution.

GENERAL NEWS

Interstate Physicians Meet.—The annual meeting of the Marinette (Wis.) and Menominee (Mich.) Medical Society was held in Marinette, November 9, and the following officers elected: president, Dr. Henry F. Schroeder; vice-president, Dr. Simon Berglund, and secretary-treasurer, Dr. Sherman E. Wright, all of Marinette.——The forty-second semiannual meeting of Union District Medical Association was held at Oxford (Ohio) Retreat, October 27. Dr. R. Harvey Cook, Oxford, was elected president, and Dr. Pearl M. Sater, Hamilton, was reelected secretary. The next meeting will be held in Richmond, Ind., in April.

Canal Zone Sanitation.—The report of the chief sanitary officer of the Isthmian Canal Zone Commission for September shows that during the month forty-eight deaths of employees occurred, thirty-three of which were from disease, and fifteen for external causes, equivalent to an annual mortality of 11.47 per 1,000. The death rates for Septembers of previous years were as follows: 1909, 12.76; 1908, 12.78; 1907, 26.83; 1906, 57.34 (in this year there was an epidemic of pneumonia among the employees); 1905, 32; and 1904, 14.31. Of the deaths from disease during the month, pneumonia caused six; malarial fever, four; pulmonary tuberculosis, three, and typhoid fever, two. No case of yellow fever, small-pox, or plague was brought to or originated on the isthmus during the month.

Hookworm Slides Available.—In a circular letter from the Hygienic Laboratory of the United States Public Health & Marine Hospital Service at Washington, Dr C W. Stiles announces that the demand for lantern slides to illustrate the anatomy and life history of the hookworm and the methods of preventing hookworm disease has increased to such an extent as to make it necessary to prepare a number of extra sets of slides These will be loaned to medical societies, colleges, teachers' associations, women's clubs and other organizations that may desire to use them on condition that all requests for their use be sent through the secretary of the state board of health and that the slides be returned express prepaid immediately following their use Preference will be shown to societies and institutions located in hookworm infected states

Surgeons Organize Congress—The Clinical Congress of the Surgeons of North America was organized at the Hotel La Salle, Chicago, November 17, the initial membership being made up of the surgeons in attendance at the series of clinics It is proposed to continue these clinical reunions year by year in one of the large cities of the country Membership is made up of surgeons who register at the regular sessions of the congress The following officers were elected president, Dr Albert J Ochsner, Chicago, vice president, Dr John G Clark, Philadelphia, editor and general secretary, Dr Franklin H Martin, Chicago, treasurer, Dr Allen B Kanavel, Chicago, and general manager, Mr A D Ballou, Chicago

Red Cross Seals—The Christmas seals of the National Association for the Study and Prevention of Tuberculosis will be on sale all over the United States in postoffices and elsewhere in a few days and throughout the holiday season We show the design of this year's seal on the left and last year's stamp on the right The actual seals are in red and green and are very attractive for fastening gifts and embellishing letters, etc The proceeds of the sale go to the above mentioned association for its work against the great white plague All possible publicity is being given to the sale, and. in many cases, physicians are taking the lead in seeing that the seals are on sale in their several communities, and that the public is informed through the local newspapers The subject is further spoken of in the Editorial Department in this issue

AMERICAN RED CROSS
MERRY CHRISTMAS HAPPY NEW YEAR

1910 Seal

1909 Stamp

Infant Mortality Prevention—The first annual meeting of the American Association for Study and Prevention of Infant Mortality took place at McCoy Hall, Johns Hopkins University, Baltimore, Nov 9-11 An exhibition was held in connection which remained open until November 16 The meeting and exhibition attracted a representative attendance of physicians, sanitarians, trained nurses and social workers from the United States and Canada Resolutions were adopted committing the association to a campaign in the interest of birth registration, encouraging the promotion of undertakings for the prevention of disease in rural communities, urging more practical instruction in the subject of hygiene in normal schools, and in other training schools for teachers, and advocating the establishment of a national department of health The subject discussed at the opening session was "The Duty of a Nation to Its Potential Citizens" Dr J H Mason Knox, Jr, President, 1909 1910, presided, and Cardinal Gibbons pronounced the invocation The speakers were M Jusserand, French Ambassador to the United States, Dr Abram Jacobi, New York, Professor Irving Fisher, of Yale University, and Dr William H Welch, of Baltimore The other sessions were presided over as follows Philanthropic Prevention Dr Hastings H Hart, of the Russell Sage Foundation, New York, Municipal, State and Federal Prevention, Dr William H Welch, Medical Prevention, Dr L Emmet Holt, New York, and Educational Prevention, Dr Helen C Putnam, of Providence The list of officers was published in THE JOURNAL of November 19, page 1819 The American Association for Study and Prevention of Infant Mortality was organized at New Haven, one year ago, following the conference called by the American Academy of Medicine on the Prevention of Infant Mortality The association closes its first year with a membership of over five hundred The enrolment is distributed throughout thirty five states Thirty two societies have entered into affiliated relations with the association The headquarters are at the Medical and Chirurgical Faculty Building, 1211 Cathedral Street, Baltimore, and Miss Gertrude B Knipp is the executive secretary.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Nov. 12, 1910

A Home Hospital

Patients who require hospital treatment in London may be divided into two classes—the poor, who are admitted into the hospitals where they are treated gratuitously, and the rich, who go into nursing homes The latter are private enterprises in which the total expenses may amount to $1,000 or $1,500 Now, there are many patients who cannot be classed as poor, but who cannot pay these charges, and these, though able and willing to pay moderate charges, are driven into the hospitals to become recipients of charity intended only for the poor A movement is now on foot in London to remedy this evil The Westminster Division of the British Medical Association proposes to build a small hospital containing forty beds, equipped in the most modern fashion to accommodate patients at a varying scale of fees There will be no regular staff but each patient will be attended by his own physician, who can call in any assistance he may require The cost of the undertaking is estimated at $60,000 The institution will be entirely controlled by physicians, with perhaps the assistance of one or two business men The scheme, if successful, will probably lead to the establishment of similar institutions throughout the country

Food Requirements

A very careful series of observations of the dietary of the Bengalis has been made by Captain D McCay of the Indian Medical Service, and is interesting in connection with the revolutionary doctrine of Professor Chittenden as to the small amount of protein necessary for man The subjects belonged to various classes, whose protein metabolism amounted to 0 113 gm of nitrogen per kilogram of body weight per day Professor Chittenden states that "a daily metabolism of 0 1 to 0 12 gm of nitrogen per kilogram of body weight is quite adequate for physiologic needs, provided a sufficient amount of non nitrogenous food is taken to meet the energy requirements of the body" In the Bengalis we have a whole race who for centuries have lived on the dietetic system advocated by the American professor Their physical development does not support his contention Captain McCay finds that the Bengali is 25 per cent lighter than the average European and has a smaller chest measurement, though of much the same stature His blood also contains 25 per cent less hemoglobin and its pressure is 25 per cent less than that of the European Compared with Anglo Indian and Eurasian students, Bengali students show no progress in physical development during their period of study between the ages of 16 and 20, though they all live in similar surroundings and differ mainly in the fact that they consume about 0 11 gm of nitrogen per kilogram of body weight less as against 0 19 of the two former classes In physical endurance and activity the Bengali laborer is much inferior to the European In Calcutta insurance offices rate all Bengali lives as five years worse than European, and one large office will accept the policies of only well educated Bengalis of the higher castes, and even then not beyond the ages of 35 to 38

Plague in England

In my last letter to THE JOURNAL [November 19, p 1820] the epizootic of plague among rats in Suffolk was reported United action is being taken by the various local health authorities around Ipswich (the capital of the county) in the destruction of rats Not only in the affected district is this being done, but precautions are being taken in the adjacent districts to prevent the spread of the disease to them The peninsula shaped district lying between the rivers Orwell and Stour, in which the disease first appeared, is being systematically scoured for rats As hares and rabbits have also been found dead from the disease, these animals and other game from the affected district are no longer being eaten Two ferrets have died from plague after eating a dead rabbit, and a warning has been issued not to feed them on rabbits Vegetable growers in the affected district are incurring serious losses, as they cannot sell their produce In London special precautions against the introduction of plague are being taken Rats dead from the disease have been found in the docks Last month 3 095 rats were destroyed in vessels and dock warehouses, making a total of 640,619 exterminated since the work of destruction was systematically begun in 1901.

The Employment of the Tuberculous

The employment of persons who have recovered from tuberculosis often furnishes a more difficult problem than their treatment. The occupation which was followed before the onset of the disease has frequently been unhealthful, and to return to it means to court a relapse, while the pecuniary loss in learning a new trade may be more than the patient can stand. A large number of representatives of hospitals for consumption, sanatoriums and health societies attended a conference arranged by the Charity Organization Society to discuss the after-care and employment of consumptives discharged from sanatoriums. Dr. Jane Walker, a sanatorium superintendent, said that the best trade for a discharged tuberculous patient was, with few exceptions, his old one, for thereby most money could be made, and anxiety, that potent factor in consumption, was minimized. Indeed, an unsuitable occupation with plenty of money coming in was better than an ideal one with very little coming in. However well a patient might be on leaving a sanatorium, he wanted careful watching for two years after leaving. If he had no work and his food was insufficient, he was almost certain to lose ground. No patient should be discharged from a sanatorium unless he had a friend in the neighborhood to which he was going. Dr. Burton Fannin, another sanatorium superintendent, gave an interesting analysis of the after-history of 306 patients with mild cases. Sixty per cent. went back to their former work; 31 per cent. to new work, and only 8 per cent. could find no work. Of those who went to outdoor work 76 per cent. kept well, 12 per cent. fairly well, and 10 per cent. became worse. Of those who had taken indoor work, 73 per cent. were in good health, 11 per cent. were fairly well, and 15 per cent. became worse. There was, therefore, but little difference between outdoor and indoor employments.

The Care of the Epileptic and Feeble-Minded

At a conference of poor law authorities on the subject, Dr. Jordan, medical officer of the Monyhull Colony for Epileptics and Feeble-Minded, gave an account of the work which had been done and the results achieved at the colony since it was opened in March, 1908. As a result of the training and treatment, the inmates had not only in many cases fewer fits, the feeble-minded were not only merely less feeble-minded, but they were nearly all better men and women than when admitted. The agencies of improvement were (1) work, (2) recreations and amusements, (3) education, mental and physical, (4) medical treatment. Dr. Jordan recommended that all feeble-minded persons should be removed from the workhouses and poorer private homes to institutions in which they could be properly trained. Perhaps the policy would be adopted in the future of confining all sane epileptics and feeble-minded persons in industrial colonies where the sexes could be separate after childhood.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Nov. 3, 1910

Personals

Professor Wenckebach, of Groningen, has declined a call to Marburg as director of the medical clinic.

Professor v. Leube celebrated his twenty-fifth anniversary as regular professor on the Wurzburg faculty October 31; on this occasion he was given the title of Excellency.

Centennial of the Leipsic University Gynecologic Clinic

The university gynecologic clinic of Leipsic celebrated its centennial October 30. The director of the institute, Professor Zweifel, was appointed privy counselor on this occasion. In addition, the city of Leipsic endowed two beds in the institution for needy lying-in women.

Bacteriologic Laboratories in Bavaria

Laboratories for bacteriologic investigation have been established in Munich, Erlangen and Wurzburg in connection with the universities. These institutions are to undertake investigations and make reports on bacteriologic questions for public officials and institutions and licensed physicians. The fee for examination is 50 cents (2 marks) for microscopic search for disease germs (tubercle bacilli, etc.); $1 (4 marks) for microscopic and cultural investigation of blood, etc., for disease germs; $2 (8 marks) for the more difficult cultural investigations of excreta (e. g., in typhoid); and $1.50 (6 marks) for the serum test for syphilis. If animal experiments are necessary, the fees are higher, as also for extensive reports.

Infectious Diseases in Prussia in 1908

According to the official report recently published, the deaths from influenza for 1908 were nearly twice as high as the previous year, being 2.29 per 10,000 living against 1.45 for 1907. Influenza was most prevalent in the three first months of the year. Of 8,824 deaths, 5,532 were over 60. In sixteen districts the disease was epidemic. The epidemic character was marked in boarding schools and college dormitories. The prevalence and mortality of cholera morbus was also greater than in the previous year. The mortality amounted to 26,454, or 6.8 per 10,000 living. In the first year of life it amounted to 218.65 per 10,000 living. These children were nearly all artificially fed. The mortality was much smaller in the country than in the cities.

The morbidity and mortality from typhoid for 1908 was smaller than in the previous year in accordance with the steady decrease of the last decade; it amounted to only 0.54 per 10,000 living. By bacteriologic examination, numerous bacilli-carriers were discovered. In the spread of typhoid, the transmission from person to person played the greatest rôle. There were only 390 cases of small-pox in the entire year, with sixty-one deaths, and all the cases could be referred to infection introduced from Russia.

In the general hospitals of Prussia, 22,418 persons (13,486 men and 8,932 women) were treated for gonorrhea; 23,909 persons (14,703 men and 9,206 women) for syphilis and chancroid—a total of 12.01 cases of venereal disease for 10,000 inhabitants. From puerperal fever 3,899 mothers died, 1,757 in cities, 2,142 in country districts. For 10,000 living of the female sex, two died of puerperal fever, or 30.2 for every 10,000 deliveries.

The mortality from diphtheria and croup was 9,797, 2.55 per 10,000 living; this figure is a little higher than in the previous year, but relatively lower than in all other previous years (1898: 5.56 per 10,000). There were 74,000 cases of the disease reported. From scarlet fever 8,182 persons died, 2.2 per 10,000; 81,000 cases were reported; from measles and rotheln, 7,359 died, 1.92 per 10,000, and from whooping-cough 10,672, 2.77 per 10,000.

Robert Koch on the Epidemiology of Tuberculosis

The last article by Robert Koch has just appeared in the *Zeitschrift fur Hygiene.* It is an address on the epidemiology of tuberculosis which he delivered in the Academy of Sciences. He discussed in particular the question to what the reduction in mortality from pulmonary tuberculosis in the various countries is to be attributed. As the reduction in mortality is not uniform, different causes must be responsible in different places; a reduction of virulence is not to be assumed. The decrease of consumption since the discovery of the tubercle bacillus is explained by many by the fact that in consequence of the recognition of the infectious character of tuberculosis, men are more careful to avoid the possibility of infection. While this explanation has much to its credit, it must not be regarded as a complete one. The claim put forth by German authors that social legislation, particularly insurance against illness, has caused a decrease of tuberculosis, is valid also to a certain degree. But the reduction of the mortality rate has been observed also in most other countries where laws of this sort have not yet been introduced.

In his opinion, sanatorium treatment and hospitalization of tuberculous individuals are the main factors in the reduction. Where institutional care has been most readily available, the morbidity and mortality from tuberculosis have been reduced to the greatest extent, and *vice versa.* To this Koch, like Newsholme, ascribes the facts that in England and Scotland the mortality has decreased, while in Ireland it has risen; that in Norway the mortality has increased and that it is remarkably high in Paris.

Of scarcely less importance is another factor, namely, the housing conditions. The smaller the dwelling the more infection is favored, and in this respect especially an insufficient provision for bed room is dangerous. The fact that cities with us have frequently a smaller tuberculosis mortality than the neighboring country is to be referred first to the lack of hospitals, but, secondly, to the custom of the country population to choose the poorest and smallest room in the house as the sleeping room. According to Kayserling, of the consumptives who died in their own home, 40.6 per cent. occupied one-room dwellings, 41.7 per cent. two-room dwellings. In Berlin in the course of three years more than 8,000 persons were exposed to infection by the consumptives who died in one-room dwellings.

Epidemiologic studies of this sort can be carried out only on the basis of extensive mortality statistics, which must include exact details. When the mortality curve for a larger or smaller district is rising or does not show a decline, investigation should be made to learn whether the measures adopted are effective or should be improved or supplemented. In Norway, for instance, the course of the curve for pulmonary tuberculosis instigated the building of more sanatoriums and hospitals and in this way a reduction of the curve was brought about.

Localization of Brain Functions

At the Konigsberg Naturforscher assembly, v. Monakow, the neurologist of Zurich, delivered a very interesting address on our present knowledge of the localization of brain functions. Monakow especially opposes the common view, both of clinicians and physiologists, according to which the higher psychic functions and psychologic conceptions which arise from self contemplation are referred to circumscribed parts of the cortex without any analysis into their physiologic constituents. He makes the claim that before the question of localization is raised, it must be determined what can be localized and what can not. It is not correct to conclude from the symptoms which arise after a local lesion of the brain that all the functions which appear to be disturbed are localized in this part of the brain and only in this. The localization of the symptoms must not be confused with the localization of the function. In every local lesion of the brain (whether in animal experimentation or at the sick bed) two classes of symptoms may be distinguished: 1. The residuary which depend on the lack of function of the injured part. They are more or less of an elementary nature and apply especially to the reflexes. They are constant for a definite area. 2. The temporary, these differ according to the nature of the lesion and whether the affected brain is healthy or is diseased or exhausted. They are, as a rule, temporary and usually completely disappear although after varying lengths of time. Opinions still vary as to how these disturbances, which in Monakow's opinion are not to be explained by the localization of the focus, are to be regarded and especially how their disappearance is to be regarded.

Monakow rejects the view commonly assumed at present, according to which the restoration of a function is due to its vicarious assumption by another part of the brain in place of the destroyed center (in the sense that the other parts take up the task of the destroyed part in addition to their own function). According to his view the restoration of the function destroyed at the beginning depends on the disappearance of the diaschisis. By diaschisis he means a form of shock essentially similar to other kinds of shock (psychic shock, surgical shock, apoplexy) from which it is distinguished only by the manner of its development (a division of the function into the individual constituents by the removal of a directing, combining link) and further by the fact that it is to a peculiar degree selective and in its propagation follows the line of the anatomical fibers. If from a reflex arc extending over the entire cortex and the subcortical portions of the cerebrum, and consisting of a number of members acting partly synchronously and partly successively, one of the links is destroyed by a local lesion, the other members even if they are anatomically intact may be inhibited in their function and this so much the more if the lesion affect a brain which is weakened by pathologic processes or imperfect nutrition. Under such conditions the diaschisis may only imperfectly retrogress or may become permanent, but, as is shown by animal experimentation, surgical operations, etc., it is usually a transitory phenomenon. The anatomically intact members of the reflex arc resume their activity and learn to dispense with the cooperation of the destroyed member, so that at most certain disturbances of function result, disturbances which are represented by the residuary symptoms.

To learn the function of the definite portion of brain we must study the residuary symptoms, but for a rational localization of the function, the study of the diaschisis, its appearance and retrogression is indispensable. In the localization of function, it must be particularly kept in mind how various are the individual nervous actions in character and structure and how little we are able to analyze and group nervous functions according to their physiologic factors. Even the simpler nervous activities can be localized only according to their components and not as entities. In order to be able to understand the complicated structure of functions it is necessary to consider the phylogenetic and ontogenetic development of the central nervous system with reference to the function of its individual component systems. The simplest form of the central nervous system (in the invertebrates) is represented by the ganglion system. With this is associated in the next higher stage the metameric system (lower vertebrates), then the midbrain system (bony fishes), and finally the cerebral cortex system (first in reptiles). In such a way the next higher system is always differentiated from the previous one (and this, indeed, occurs from the frontal end). Parallel with this development runs the finer structure of the organs of the body, of the muscles, the differentiation of organs of special sense, the development of the limbs, the appearance of constantly more complicated and purposive movement and the influence on action of individual experiences from combined impressions on the memory. In the coordinated movements and the sense perception of the higher animals all divisions of the central nervous system participate in common, but in a different way. In these phenomena the cortical system not only assumes the controlling rôle but cooperates with the phylogentically older systems in relatively elementary actions at least in the sense that it assumes the more specialized and later acquired components. In locomotion for instance, the metameric (spinal) system furnishes the foundation for movement in the form of the movements of the legs as they follow each other, the cerebellum provides the factors for maintaining equilibrium in rest and in movement as well as the unconscious finer regulation, the midbrain provides the connection between the individual action of the spinal segments and the cerebrum finally assumes initiation of the movement and the superintendence of it as a whole and especially the spatial direction, particularly with reference to the direction of the walk and its goal and in addition the finer adaptations of the feet to the condition of the ground.

In all accomplishments, furthermore, the chronologic factor, that is, the successive in addition to the coincident, must be taken into consideration to a great degree, the more highly developed the activities, the more the merely local factor is subordinated to the chronologic. Each function consists of synchronous and successive individual actions. In a narrowly circumscribed part of the brain only synchronous activities can be localized. The change of activity, the substitution of one activity by another, and in short the succession of functions in time evidently cannot be sharply localized. The higher the entire activity the more the chronologic factor comes to the front and in the highest, the psychic function, in the enormous predominance of the chronologic factors and in consideration of the fact that continually the same neurons are employed but constantly in other combinations and groups, it is no longer possible to determine localization.

Berlin Auxiliary Schools

The Berlin public school is to undergo a complete transformation by the establishment of the so called auxiliary schools. These auxiliary schools in future are to receive the public school children for whom systematic instruction in the ordinary schools is not successful on account of intellectual or physical defects, but who seem to be capable of instruction. The instruction in these schools is to be so arranged that the children shall either return to the ordinary school or secure in the auxiliary school such preparation for later life as is possible to them. These new schools constitute a department of the public school and are intended for children of all religious denominations. At first only one preliminary class is to be opened in each of the thirteen Berlin school districts. Further development according to the needs will be made. All such children may be received as have attended the lowest class of the ordinary schools for at least one year without success and after the close of this year remain in the lowest division of this class. This preliminary class shall be attached to an existing class of a public school for feeble minded children. After a year's attendance on the preliminary class children who have made little or no progress will be carefully examined to determine whether they shall be transferred to the auxiliary school or whether a further trial is to be recommended. No child shall remain longer than two years in the preliminary class. Idiotic children are to be sent to institutions for idiots. Children hard of hearing are to be transferred to a special department of the auxiliary school. The already existing special classes are to be united into an auxiliary school with five progressive classes. The children are to remain at least two years with the same teacher. As a rule it is provided that there shall be eighteen children to the class in the lower grade, twenty in the classes of the middle grade and twenty-two in the upper grade with twelve in the classes for those hard of hearing. In these classes the principles of coeducation of the sexes will be carried out. Children who are shown to be insane or epileptic will be excluded from the instruction in the auxiliary school and may be sent to public institutions or provided with private instruction at the cost of the municipality. Children with defective speech will be given special instruction.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Nov. 7, 1910.

Investigations on Occupational Diseases

In 1914 a congress on the diseases of occupation will be held in Vienna. As the managing committee consists of Viennese physicians an action has now been undertaken in this city as well as in the empire, to ascertain the conditions which tend to influence the health of laborers unfavorably. The investigations are directed to the following points: effect of working in hot and moist air (laundries, bakeries and mines); influence of bacterial infection (anthrax, pneumococcus) and of dust-producing occupations (skin and leather trades, the butchers' trade, the iron, stone, celluloid trades); diseases due to electricity; diseases due to industrial poisons, such as anilin dyes, mercury and lead. Special stress is laid on the study of the phenomena of fatigue, its physiology and pathology in consideration of industrial occupations, and on the effect of night work.

A Protest Meeting of the Austrian Medical Profession Against Threatened Legislation

The prolonged conflict between the medical profession engaged in dentistry and the technical dentists, who have no medical instruction, is the object of our latest legislative experiment. The government intends to create an "intermediate" profession, so to say, consisting of men who, after studying a little anatomy and pathology, may be allowed to study the pathologic conditions of the human mouth and teeth and surgery of this region. To this the medical profession could assent only on condition that the medical part of the curriculum be sufficiently thorough to make the "dentist" really capable of dealing surgically with pathologic conditions. But what the profession stoutly opposes is the plan of the government to give the same right to the present non-medical dentists, and in future to permit only the graduates of the new—as yet non-existent—dentistry school to practice dentistry. Thus, doctors of medicine would not be allowed to extract teeth or fill them, while laymen—the present dentists—would have the right to operate on fractures of the mandible, or to resect the apex of the tooth, etc. Physicians justly assert that this first legalized "raid" into the domain of the doctor will soon be followed by demands for admission to practice by opticians, masseurs, dressmakers and the like. A mass meeting of physicians took place a short time ago in Vienna, in which the presidents of various important medical societies, as well as the medical members of the Austrian Parliament, spoke before an audience of some 800 delegates of the medical practitioners of the empire. In a resolution adopted by the meeting and forwarded to the government, the representatives of the medical profession protested vehemently against the intended laicizing of medicine. If the threatened bill should become law, the profession would be prepared to order a general medical strike in the whole empire.

The New Radium Institute

A few days ago, the Radium Institute, the first of its kind on the continent, was opened in Vienna in the presence of a brilliant gathering. It is one of the few scientific institutions erected by private grants, all such buildings being usually paid for by the state. It is devoted solely to the study of the chemical and physical qualities of radium. No teaching will take place in the building. There is a large laboratory on the ground floor, for the purpose of examining spring waters for radio-activity, and also a chemical and microscopic laboratory with an ultramicroscope. An *x*-ray outfit and a plant for high-voltage currents up to 4,000 volts is installed on the first floor, while a gigantic electromagnet, weighing 1,300 hundredweight, is arranged for the purpose of investigations. The institute will not conduct medical experiments, but will, if necessary, place the substance at the disposal of hospitals. The institute has been presented with 3 grams of radium bromid, valued at $200,000, by the Academy of Sciences of Austria, to which latter corporation the institute will be annexed in the near future.

Marriages

J. Don Miller, M.D., Indianapolis, to Miss Maud Conner of Anderson, Ind., November 1.

Bernard J. O'Neill, M.D., San Diego, Cal., to Miss Anna Chapman of Sigel, Ill., November 9.

William Day Chapman, M.D., Silvis, Ill., to Miss Bessie Wayne of Orion, Ill., November 10.

John A. Salb, M.D., Indianapolis, to Miss Mary McNurney of Knightstown, Ind., November 1.

Nevin M. Wetzel, M.D., Jameson, Mo., to Miss Lillie Joachimi of Versailles, Mo., October 4.

John Francis Urie, M.D., U. S. Navy, to Miss Caroline Foulke of Richmond, Ind., November 12.

John Walter Carmack, M.D., Indianapolis, to Miss Bertha Pinber of Pleasant Lake, Ind., November 8.

Henry Irvino Berger, M.D., to Miss Ella Winkler, both of Indianapolis, at Covington, Ky., November 5.

John Kaylor Kingsbury, M.D., to Miss Florine Alcott Williams, both of Indianapolis, November 16.

Otto Carl Reiche, M.D., Laceyville, Pa., to Miss Vinnie Fenstermaker of Allentown, Pa., November 11.

John Samuel Boggess, M.D., U. S. P. H. and M.-H. Service, to Miss Ethel Keating of Columbus, Ohio, November 22.

Deaths

George Frederick Barker, M.D. Albany (N. Y.) Medical College, 1863; an eminent physicist, chemist and teacher; died at his home in Philadelphia, May 25, aged 74. He did not follow the practice of medicine, but devoted his life to chemistry. He served as professor of natural sciences at Wheaton College, Ill., professor of chemistry in the Western University of Pennsylvania, professor of physiologic chemistry and toxicology in Yale Medical School, professor of chemistry in Williams College, and from 1873 to 1900 was professor of physics at the University of Pennsylvania, and since that time emeritus professor. In 1872 he served as state chemist of Connecticut. He was given the honorary degree of Sc.D. by the University of Pennsylvania in 1898, and of LL.D. by Allegheny College in 1898, and McGill University in 1900. In 1881 he received from the French government the decoration of the Legion of Honor.

Joseph R. Gibson, M.D. Colonel, M.C., U. S. Army, retired, died at his home in Philadelphia, November 2, aged 72. Dr. Gibson entered the army as assistant surgeon in 1862, and was made captain in 1866. In 1877 he was promoted to major and surgeon, in 1894 to lieutenant-colonel and deputy surgeon general, and in 1895 was retired on account of disability in line of duty, and was advanced to the rank of colonel on account of Civil War service; in 1904 he received the brevet ranks of captain and major for faithful and meritorious services during the Civil War, and in 1866 was made brevet lieutenant-colonel for meritorious and distinguished service at Hart's Island, N. Y., where cholera prevailed.

Leonard Luton, M.D. Hahnemann Medical College, Chicago, 1867; M.C.P. and S., Ont., 1869 (Hon.); for many years a member of the Ontario Medical Council and its president in 1898; for fifteen years coroner of Elgin County and surgeon to the County Home of Industry; a member of the city council of St. Thomas for five years; and for two years chairman of the board of health and president of the board of governors of the Amasa Wood Hospital; died at his home, November 1, from uremia, aged 75.

Albert Payson Jackson, M.D. Albany (N. Y.) Medical College, 1862; a member of the Medical Society of the State of New York, and at one time president of the Genesee County Medical Society; one of the founders of the New York State Medical Association, and of the state and national associations of railway surgeons; surgeon of the western division of the West Shore Railroad; health officer of Oakfield, and coroner of Genesee County for fourteen years; died at his home in Oakfield, November 9, from heart disease, aged 67.

Robert Hunter Duncan, M.D. College of Physicians and Surgeons, Baltimore, 1885; for several years surgeon for the Pacific Mail Steamship Company; a specialist on diseases of the eye and ear, of Brooklyn; a member of the staff of the Manhattan Eye and Ear Hospital, New York City; the Eye and Ear Infirmary of Long Island College Hospital, and Williamsburg Hospital; died in the Jamaica Hospital, October 31, aged 48.

Henry Martel Newman, M.D. Georgetown University, Washington, D. C., 1876; a member of the Medical Association of the District of Columbia; and one of the staff of Providence Hospital and St. Ann's Orphan Asylum, Washington; died at his home in that city, November 11, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent on account of ill health, aged 54.

Frank Newell Lewis, M.D. University of Vermont, Burlington, 1882; a member of the American Medical Association, New York Academy of Medicine, and American Ophthalmological Society; surgeon to the Manhattan Eye, Ear and Throat Hospital; professor of diseases of the eye in the New York Postgraduate Medical School; died at his home in New York City, November 13, aged 53.

Montgomery Linville, M.D. Jefferson Medical College, 1873; a member of the American Medical Association, and National Association of Railway Surgeons; surgeon to the Shenango County Hospital, New Castle; formerly local surgeon to the Pennsylvania System; died at his home in New Castle, Pa., November 14, from the effects of poison, self-administered accidentally, aged 56.

William Samuel Ackert, M.D. Albany (N. Y.) Medical College, 1891; a member of the American Medical Association; attending physician to the Home for the Friendless, and Old Ladies' Home, Poughkeepsie, N. Y.; and during the summer of 1909, physician to the local tuberculosis camp; died at his home in Poughkeepsie, November 7, from valvular heart disease, aged 44.

Hubert DeLancey Knickerbocker, M.D. New York Homeopathic Medical College, New York City, 1891; a veteran of the Spanish-American War; for a time health officer of and a member of the Board of Education of Springwater, N. Y.; died at the home of his sister in Watertown, N. Y., November 8, from diabetes, aged 43.

Joseph Claybaugh Kalb, M.D. Starling Medical College, Columbus, Ohio, 1857; of McPherson, Kan.; assistant surgeon of the Forty-second Ohio Volunteer Infantry, surgeon of the Forty-fifth Ohio Volunteer Infantry, and division surgeon during the Civil War; died in Fort Worth, Texas, October 30, from cerebral hemorrhage, aged 79.

William H. Rothert, M.D. Medical College of Ohio, Cincinnati, 1889; a member of the Association of Military Surgeons of the United States; surgeon of the First Infantry, Ohio National Guard; an instructor in Miami Medical College; died at his home in Cincinnati, November 4, from cerebral hemorrhage, aged 46.

William S. Searle, M.D. University of Pennsylvania, 1859; for several years vice-president of the State Board of Medical Examiners of New York; one of the founders and for thirty-six years a member of the staff of the Brooklyn Homeopathic Hospital; died at his home in Brooklyn, October 30, aged 77.

Frank Ferrell, M.D. New Orleans School of Medicine, 1860; surgeon of the Thirty-Fourth Mississippi Infantry, C. S. A., during the Civil War; and for many years a member of the Mississippi State Medical Association; died at his home in Ashland, September 13, from emphysema, aged 78.

Jacob Harvey Edwards, M.D. University of Tennessee, Nashville, 1901; a member of the American Medical Association; of Westbrook, Texas; was thrown from his buggy and instantly killed, while making a professional call near Cuthbert, Texas, October 24, aged 37.

Lizzie Wild Charles, M.D. prominent as an organizer of branches of the Audubon Society in Illinois, and in the work of woman's clubs and schools; for two terms president of the Austin Woman's Club; died at her home in Austin, October 6, from pneumonia, aged 67.

James I. Thomas, M.D., for many years a resident of Denver; for fifty years a practitioner of the United States and formerly a member of parliament of the Dominion of Canada; died in the Denver County Hospital, March 18, from senile debility, aged 90.

Francis Bartow Gregory, M.D. Tulane University, New Orleans, 1886; a member of the American Medical Association; formerly of Lumpkin, Ga.; died recently at his home in Americus, Ga., and was buried at Lumpkin, November 4, aged 49.

William S. Chenoweth, M.D. Northwestern Medical College, St. Joseph, Mo., 1883; a member of the American Medical Association; and a veteran of the Civil War; died at his home in Fern Hill, Wash., November 1, from cerebral hemorrhage, aged 61.

William Snelson, M.D. College of Physicians and Surgeons, Keokuk, 1878; formerly of Massena, Iowa; for many years a member of the city council; died at the home of his daughter in Amarillo, Texas, October 27, from arteriosclerosis, aged 62.

Louis A. de Laureal, M.D. Homeopathic Medical College of Missouri, St. Louis, 1888; coroner of St. Martin Parish, La., for several years; and a member of the Board of Health of St. Martinsville; died at his home, August 28, aged 42.

Sumner Davis, M.D. Chicago Homeopathic Medical College, 1883; demonstrator of anatomy at his alma mater for two years; formerly of Grand Island, Neb.; died on the ranch of his son near New Plymouth, Ida., November 1.

Adolph Berger, M.D. Humboldt Medical College, St. Louis, 1862; a veteran of the Civil War; and for thirty years a member of the Board of Education of Lebanon, Ill.; died at his home in that city, November 10, aged 89.

Leslie B. Shanklin, M.D. Central College of Physicians and Surgeons, Indianapolis, 1905; of Sullivan, Ind.; a member of the American Medical Association; died in Pueblo, Colo., November 11, from tuberculosis, aged 33.

John Arthur Montgomery, M.D. College of Physicians and Surgeons, New York City, 1872; died at his home in Walton, N. Y., October 24, from injuries received in a collision between his carriage and an automobile, aged 67.

Paul Thomas Kimball, M.D. College of Physicians and Surgeons, New York City, 1887; a member of the American Medical Association; died at his home in Lakewood, N. J., November 3, from heart disease, aged 48.

Charles Borromeo Curran, M.D. Long Island College, Hospital, Brooklyn, 1893; for fifteen years a member of the staff of the Brooklyn Board of Health; died at his home, November 1, from pneumonia, aged 38.

Edward E. Brown, M.D. Albany (N. Y.) Medical College, 1879; a veteran of the Civil War; formerly of Phelps, N. Y.; died in the State Soldiers' Home, Bath, N. Y., October 6, from chronic nephritis, aged 76.

Seth G. Shanks, M.D. Albany (N. Y.) Medical College, 1875; of Albany; a member of the American Medical Association; died in the Albany Hospital, November 5, after an operation for peritonitis, aged 63.

Walter H. Fenby, M.D. University of Maryland, Baltimore, 1894; a member of the Medical and Chirurgical Faculty of Maryland; died at his home in Ruthsburg, November 5, from acute nephritis, aged 40.

George Asbury Dewey, M.D. Western Reserve University, Cleveland, 1849; surgeon in the Federal service during the Civil War; died at his home in Brooklyn, November 1, from senile debility, aged 82.

Thomas L. Blackwell, M.D. Louisville Medical College, 1874; a member of the Medical Society of the State of North Carolina; died at his home in Boonville, May 6, from disease of the liver, aged 58.

James L. Robinson, M.D. University of Louisville, 1881; a member of the Indiana State Medical Association; died at his home in Wheatland, November 8, from cerebral hemorrhage, aged 56.

George C. Young, M.D. Michigan College of Medicine and Surgery, Detroit, 1890; of Jackson, Mich.; fell through an elevator shaft, November 2, and died from his injuries November 3, aged 52.

Charles A. Dana Miles, M.D. Jefferson Medical College, 1876; for two terms coroner of Westchester County, N. Y.; died at his home in Yonkers, November 9, from acute gastritis, aged 58.

Claud M. Ferro, M.D. College of Physicians and Surgeons, Chicago, 1883; of Marshall, Minn.; died in the Minneapolis Sanitarium, recently, and was buried at Tracy, June 15, aged 59.

Ezra B. Evans, M.D. University of Virginia, Charlottesville, 1871; a member of the Indiana State Medical Association; died at his home in Greencastle, November 9, from tuberculosis, aged 64.

William J. McNeill, M.D. Detroit College of Medicine, 1899; of Detroit; died in St. Mary's Hospital, Saginaw, November

6, after an operation for the relief of intestinal obstruction, aged 39.

William M. Roberts, M.D. Northwestern University Medical School, Chicago, 1893; of St. David, Ill.; died in Graham Hospital, Canton, Ill., November 8, from heart disease, aged 45.

James Baker, M.D. Rush Medical College, 1869; physician of Fulton County, Ill.; died at his home in Table Grove, November 3, from tuberculosis, aged 65.

James A. Baird, M.D. Louisville Medical College, 1894; formerly of Moulton, Texas; died at his home in Beaumont, Texas, November 5, from nephritis, aged 54.

Andrew Drybrough, M.D. University of Edinburgh, Scotland; formerly of Evansville; died at his home in Worthington, Ind., October 20, from epilepsy, aged 41.

Harry L. Schulze, M.D. Columbus (O.) Medical College, 1883, Jefferson Medical College, 1886; died at his home in Mt Oliver, Pa, November 1, aged 53.

William G. Branch, M.D University of Louisville, 1884; a member of the Louisiana State Medical Society; died at his home in Bunkie, August 25, aged 49.

William Edward Miles, M.D. Eclectic Medical Institute, Cincinnati, 1884; died at his home in Webb City, Mo., October 30, from disease of the liver, aged 59.

Charles H. McMillan, M.D. Northwestern Medical College, St Joseph, Mo, 1893; died at his home in Leon, Kan., October 30 from tuberculosis, aged 40

Robert H. Green, M.D. St. Louis College of Physicians and Surgeons, 1886, died at his home in Poteau, Okla., November 2 from senile debility, aged 77.

Benjamin A. Bugg (years of practice, Ark.); for many years a practitioner of Blytheville; died recently at Gainesville, Texas, aged 75.

John B. King, M.D. Tulane University, New Orleans, 1875; of Segovia, Texas; was found dead in the Llano River, November 2, aged 62

Willard R Hillegas, M.D. Albany (N. Y.) Medical College, 1882, died at his home in Chicago, September 21, from angina pectoris.

Pharmacology

THE DR. BRANAMAN REMEDY COMPANY

A "Deaf Cure" Mail-Order Concern Which Has Been Declared Fraudulent

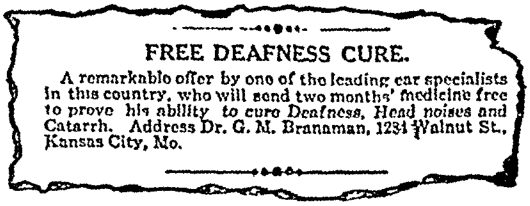
G. M. Branaman, M.D., a graduate of the Medical Department of the University of Louisville, has operated a "cure for deafness" mail-order concern in Kansas City, Mo., practically continuously since his graduation in 1891. In 1905 or 1906 he opened a branch office in Omaha, which did not stay in existence very long, apparently because it was not sufficiently profitable. Branaman's concern was known as the "Doctor Branaman Remedy Company." He employed the usual mail order medical company's method of obtaining business, that of advertising in the cheaper magazines and in (that sheet-anchor of the great American fraud) the not-too-particular religious journals Recently the United States Government through the Post Office Department, investigated the company and its methods and, as a result, has declared the business conducted by Branaman to be "a scheme and device for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises." Branaman has, therefore, been deprived of the use of the United States mails by means of a fraud order. Judge Goodwin, in his memorandum as assistant attorney general to the postmaster-general, describes in detail the methods pursued by the Branaman Remedy Company, and what follows is a synopsis taken from this report.

HOW PATIENTS WERE OBTAINED

Patients—or victims—were secured by inserting, in newspapers and magazines, advertisements similar to the one reproduced on this page (Fig. 1). The drawing part of this advertisement was the offer to "send two months' medicine free" to those who applied for it. Those who answered the advertisements were sent a booklet entitled "The New Treatment That Cures," and containing testimonials and a description of Branaman's "treatment." A letter also was sent together with that inevitable adjunct of the mail-order quack—the "symptom blank." The prospective victim was asked to fill out and return the blank and was told that on doing so his case would be carefully considered and if believed to be a curable one, he would be furnished two months' medicine free. He was also told that Dr. Branaman would accept only such cases as he believed to be curable! If the symptom blank was not returned a series of follow-up "form" letters printed to imitate personal, typewritten communications was sent, each "letter" urging that the blank be filled out.

THE "FREE TREATMENT" AS A BAIT

When the victim filled out the blank and sent it to Branaman, he received a "diagnosis" letter—also of the circular letter variety, printed to imitate typewriting. At the trial it was shown by the government that Branaman had but two forms of "diagnosis" letters—one informing the patient that he had "catarrh," the other "diagnosing" the case as one of "deafness" No matter which of the two letters the patient received, he was informed that his case was far too serious a one to be cured by medicine alone, and that, therefore, there was no use in Dr. Branaman sending the two months' free treatment promised in the advertisement and circular letters. So serious was the case, he was told, that it was imperative that he have Dr. Branaman's "Combination Treatment," which involved the use of his "electro-magnetic head-cap" (Fig. 2) in conjunction with the medicines. He was further informed that this "combination treatment" would cure his disease and that if he would pay $8 for the head-cap the 'treatment" would be sent


FREE DEAFNESS CURE.

A remarkable offer by one of the leading ear specialists in this country, who will send two months' medicine free to prove his ability *to cure Deafness, Head noises and* Catarrh. Address Dr. G. M. Branaman, 1234 Walnut St., Kansas City, Mo.

Fig 1.—Photographic reproduction of a typical Branaman advertisement.—From *Word and Works*

If the $8 was not forthcoming, follow-up letters were sent at regular intervals until either all the letters of the series had been mailed or the $8 had been extracted. These letters, like the others, were printed to simulate personal typewritten communications, the name and address of the individual to whom they were sent being "filled in" by means of a typewriter.

CURES PROMISED IN INCURABLE CASES

In preparing the case against Branaman the government inspectors corresponded with the concern as supposed patients. Five letters were sent under different names and from widely separated parts of the country. The same number of symptom blanks were filled out and each hypothetical case described by the inspectors was one of total and incurable deafness In spite of the impossibility of curing such cases, the inspector, in every instance, received the stereotyped request for $8, with the promise of a sure and permanent cure if it was paid. In each instance the regular "deafness" diagnosis letter was sent, followed by the follow-up series.

The inspector remitted $8 in one of the hypothetical cases and received "[illegible] head-cap" and the medicines. The "[illegible] arrangement of straps and metal pieces to be worn by the patient and was claimed to produce a current of electricity through the ears which, it was alleged, would revivify the nerves and other structures of the ear. With the "head-cap" came some tablets, three bottles of liquid and a vaporizer for spraying the nose and throat. The drugs were analyzed by the chemists of the Department of Agriculture, who reported them as having the following composition:

Tablets

Strychnin sulphate .	1/60 gr
Milk sugar q s	1 gr

One of these was to be taken before each meal

Ear Drops

Carbolic acid	3 12 per cent
Glycerin	25 00 per cent
Saturated solution of boric acid	71 88 per cent

The instructions with this bottle were to put three drops of the liquid in the ear each night

Vaporizer Liquid

Menthol crystals	1 18 per cent
Camphor gum	1 18 per cent
Thuja oil	0 03 per cent
Petrolatum	97 61 per cent

This was to be used as a spray for the nose and throat

Gargle

Bicarbonate of soda	2 91 per cent
Powdered borax	2.91 per cent
Carbolic acid	0 28 per cent
Glycerin	5 09 per cent
Burnt sugar, sufficient to color	
Water	88 81 per cent

The directions which went with this were ' Add 1 teaspoonful to 8 tablespoonfuls of hot water Snuff up nose Gargle throat night and morning, half each time"

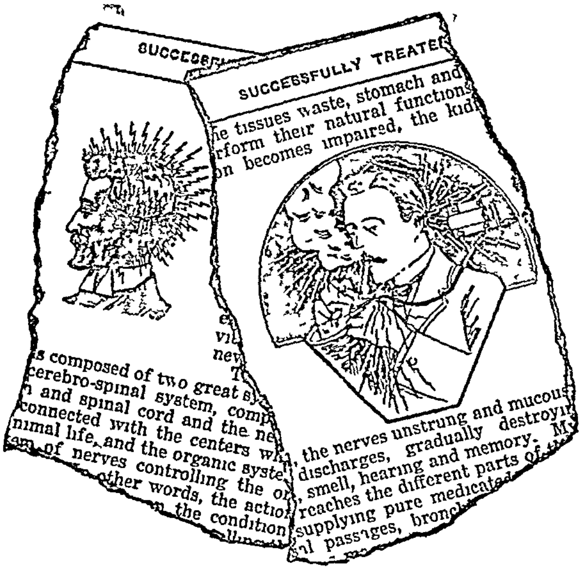

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Fig 2—Photographic reproductions from Branaman s booklet, "The New Treatment That Cures, showing the highly imaginative pictures of the electro magnetic headcap' in action

The evidence at the trial showed that the "head cap" cost Branaman about $1 50, the vaporizer about 30 cents and the medicines just described not over 50 cents For this the patient paid $8

A FRAUDULENT TESTIMONIAL

One of the testimonials published by Branaman in his booklet, The New Treatment That Cures," purported to be from one John Turner of Kansas City, Mo It was as follows

> 'I contracted cold during the Civil War It grew worse from year to year Finally my eyesight began to fail my eyes became watery I could not distinguish a man across the street My ears began to close and my hearing to fail I had distracting head noises I was worse in changeable weather My throat was dry, my ears felt full, I could hear sounds but could not distinguish words Finally I got so deaf I could not hear the clock or doorbell I went to Dr Branaman a very skeptic man I had no faith in doctors I began the treatment with excellent results My head became clear the noises began to subside my eyes gained and soon I was all right, my hearing perfect

This case was investigated by the post office inspector, who went to Turner's house Turner himself was not at home but his wife said that her husband had not been benefited by the Branaman treatment, that his hearing was so bad that he did not dare to go to work in the stock yards for fear of being run over and killed from his inability to hear anything. Mrs Turner further stated that all the inquiries her husband received regarding his cases were turned over to Branaman, Turner himself being unable either to read or to write

THE DEFENSE AND THE CHARGE

Branaman's defense in regard to offering to cure five plainly incurable cases of deafness was that he was out of the city when some of the five cases were accepted for 'treatment," and that his assistant, Dr Perkins, must have been responsible On cross examination however, Branaman retracted his previous statement as to his absence from the city on those dates

Judge Goodwin, in his memorandum as assistant attorney-general to the postmaster general, gave many reasons for holding the opinion that Branaman's business was a fraudulent one They may be summarized thus

Fraud No 1—Five different cases of incurable deafness from various parts of the country were accepted—and, as the evidence showed, intentionally accepted—for treatment and a promise of a sure cure made The number indicated that it was Branaman's practice to accept such cases and to make such promises

Fraud No 2—Branaman's continued publication of Turner's testimonial to the effect that his hearing was perfect and that he had been cured of deafness, when Branaman knew that Turner was so deaf as to be incapacitated for work

Fraud No 3—The inducement held out in the advertisements of a "free two months' treatment" when, in fact, the intent was to obtain $8 for goods costing Branaman $1 50

Fraud No 4—The representation that the case of each patient would be considered individually and that "treatment" adapted to the necessities of the specific cases would be used, when the evidence showed that the same "treatment" was sent to practically all persons sending the necessary $8

As a result of his findings the assistant attorney general declared "I find that the business being conducted through the post office at Kansas City, Mo, under names of Dr. Branaman Remedy Company and Dr J M Branaman, is a scheme and device for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and I therefore recommend that a fraud order be issued prohibiting the delivery of mail and the payment of money orders to such addresses . . ."

The order was issued

Correspondence

The Correct Name of the Rocky Mountain Spotted-Fever Tick

To the Editor—In a recent issue of The Journal (October 29 p 1574) Mr Nathan Banks charges me with 'gross violation of the rules of nomenclature," in that I have used the name *Dermacentor andersoni* instead of *D venustus* for the tick that transmits Rocky Mountain spotted fever Although the point at issue is a very technical one, it is not without its practical side, and in order to avoid a further confusion, which would result were Mr Banks' interpretation accepted, the following facts bearing on the case are made public

The name *Dermacentor venustus* Marx (a manuscript name) was originally published by Neumann in 1897, as a synonym of *D reticulatus*, its type locality was given as Texas and New Mexico

According to "Opinion 4" of the International Commission on Zoologic Nomenclature, "manuscript names acquire standing in nomenclature when printed in connection with the provisions of Article 25, and the question as to their validity is not influenced by the fact whether such names are accepted or rejected by the author responsible for their publication"

The name *D venustus* received status in 1897 and was not available as a new specific name eleven years later (1908), when Mr Banks published it as such. Its status in 1897 as given to it by Neumann is this: It is a synonym of *D. reticulatus* as interpreted by Neumann, namely, *D. reticulatus* of Europe plus specimens examined by Marx from Texas and New Mexico, plus certain other forms.

Two possibilities are present: (1) If really identical with *D. reticulatus*, the name *D. venustus* drops into synonymy and cannot be used for the spotted-fever tick. (2) The only way of separating the name from *D. reticulatus* is by finding the original specimens from Texas or New Mexico and showing that they are not identical with *D. reticulatus.*

In material recently at my disposal, I had specimens of the Marx collection labeled *Dermacentor venustus* from both Texas and New Mexico. These are the specimens on which Neumann published in 1897, and it is the Texas specimen from sheep which I designated as the type. These specimens are clearly distinct from the European *D. reticulatus*, and they represent the form which I have published as *D. venustus.*

Mr. Banks was present at a meeting of the Entomological Society, Jan. 10, 1907, when I showed drawings of the European *D. reticulatus*, and explained the differences between this and the various American forms. He also visited my laboratory for the specific purpose of examining Marx' material, and at that time the originals of *D. venustus, D. occidentalis* and *D. andersoni* were placed before him, together with drawings of the stigmal plates. He later (1908) published "*Dermacentor venustus* n. sp.," admitting that it was Marx' manuscript name and giving among the localities of specimens both New Mexico and Texas; these were the original localities of Marx' specimens which Dr. Banks had examined in the visit referred to and as published by Neumann.

Mr. Banks states in his recent letter that I have applied the name *D. venustus* to a form he did not study. This statement is difficult to harmonize with the fact that he examined the specimen on which I published and he quotes (Bull. 15, Bureau of Entomology, U. S. Dept. Agric., 1908, p. 47) the very specimen which I took as a type, namely, from "Texas (on sheep)."

If the name *venustus* dates from 1908 (as Mr. Banks claims) instead of from 1897 (as I maintain), it is now clear that Mr. Banks' description must include three sets of type specimens, namely, Marx' original material of *D. venustus*, my original type of *D. andersoni*, and the material which Mr. Banks has informed me he has selected as type, but which he also said was not from Marx' collection.

In adopting *venustus* for Marx' Texas form I have taken the only way I see open to preserve the name in question (a name proposed by a deceased colleague), namely, by attaching it to the material published in 1897. This eliminated the name *venustus* from the spotted-fever tick, for which the manuscript name *D. andersoni* had already been published and which was therefore retained.

Were the premise correct, that Marx' specimens from Texas and New Mexico are identical with the specimens from Montana, then *D. venustus* would of necessity be the correct name for the Rocky Mountain spotted-fever tick, but this premise is erroneous, and the name *venustus* must be applied to the species containing the original specimen designated under this name.

Charles Wardell Stiles, U. S. Public Health
and Marine-Hospital Service, Washington, D. C.

Offer to Medical Libraries

To the Editor:—The year 1898 will be known in the annals of medicine by an epoch-making event. In that year *Libraries*, a bi-monthly publication devoted to the interests of medical libraries, first saw the light of day in the city of Denver. For several years it made its irregular and spasmodic appearance and closed its career in a blaze of glory A.D. 1902. Its circulation reached the astounding number of 120. What it lacked in numbers it made up in quality. Among its admirers, subscribers and contributors it counted the foremost librarians of the day—Dana, Fletcher, Chenley, Billings, Grace Bryant, Fisher, Parsons, Dudley, Beer, Aheren, Putnam, Bowker, Meyers, Utley, Bowen, Noyes, Crunden, Chase, Dewey, *Merrill*, and the medical luminaries—Osler, Chadwick, Keen, Da Costa, Musser, Simmons, Edward Jackson, Hare, Horatio Wood, Solis-Cohen, Hutchinson, Gould, Dock, Senn, Bonney, Solly, Shattuck, Bayard Holmes, Jacobi, Wilson, Sewall, Eskridge and many other makers and lovers of books.

Now comes the proud editor and publisher of said defunct periodical and offers to send to all medical librarians and to all who are interested in freak medical journalism complete sets of Volumes 2, 3 and 4 and incomplete sets of Volumes 1 and 5 for the asking, as long as the supply lasts. All the said sad editor asks in return is that these, his dear departed ones, be reverently laid out, decently shrouded, adequately coffined, properly epitaphed, securely inhumed and unostentatiously gathered unto their fathers in God's acre. He devoutly and prayerfully hopes for their resurrection.

C. D. Spivak, M.D., 1421 Court Place, Denver.

Removal of Moles, Warts and Other Benign Growths

To the Editor:—Dr. J. C. Bloodgood, in his article on "Surgical Treatment of Cutaneous Malignant Growths" (The Journal, Nov. 5, 1910, p. 1615), asserts that he was "the first, or at least one of the first, to call attention to the importance of removal of certain forms of benign growths, pigmented moles, some seven years ago." I wish to call attention to the fact that Dr. S. H. Weeks, of Portland, Maine, professor in surgery in Bowdoin College, taught the importance of removal of moles, warts, etc., as soon as seen by the surgeon, as long ago as 1895 and 1896; thus he had priority of Dr. Bloodgood by seven or eight years.

O. I. Bemis, Bangor, Maine.

Prevention of Perforation in Submucous Resection of the Nasal Septum

To the Editor:—Permit me to offer a suggestion in connection with Dr. Nelson's method of preventing a perforation in submucous resection (The Journal, Nov. 19, 1910, p. 1875): Incise the mucous membrane and perichondrium at B instead of at A and retract. Then dissect forward the tissue anterior to the incision and incise the cartilage at A. This allows the flap from B to A to cover the stump of cartilage. If this is not done the incised membrane undergoes cicatricial retraction and leaves a dry and crusted surface, besides delaying healing.

Albert Bardes, New York.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Nov. 19, 1910.

Davis, W. Cole, lieutenant, November 11, left Fort Ethan Allen, Vt., on ten days' leave of absence.

La Garde, Louis A., colonel, November 13, left army medical school, Washington, D. C., on ten days' leave of absence.

Lowe, Thomas S., M.R.C., Nov. 8, left Presidio of Monterey, Cal., for temporary duty at Whipple Barracks, Ariz.

Long, Charles J., D.S., November 11, leave of absence extended twenty days.

Stone, John H., major, November 12, relieved from duty at Fort Sam Houston, Texas, and ordered to Fort McIntosh, Texas, for duty.

Grubbs, Robert B., major, November 12, relieved from duty at Fort McIntosh, Texas, and ordered to Fort Bliss, Texas, for duty.

Dutcher, B. H., major, Nov. 14, 1910, leave of absence further extended twenty-eight days.

Mason, George L., D.S., November 14, left from temporary duty at Fort Lincoln, N. Dak., and en route to Fort Yellowstone, Wyo.

Woodall, William P., captain, November 14, left Fort D. A. Russell, Wyo., on fifteen days' leave of absence.

Patterson, Robert F., D.S., November 15, relieved from duty at Fort Sheridan, Ill., and ordered to the Philippine Islands for duty on transport sailing from San Francisco about Feb. 15, 1910.

Bernheim, Julian R., D.S., November 15, relieved from duty in the Philippine Islands and ordered to proceed to San Francisco on the transport sailing from Manila, P. I., about March 15, 1910. On expiration of his leave of absence will proceed to Fort Sheridan, Ill., for duty at that station.

Tasker, Arthur N., lieutenant, November 15, granted leave of absence for one month and fifteen days.

Walker, Thomas C., M.R.C., November 16, leave of absence extended twenty days.

Phillips Hiram A., lieutenant, November 16, ordered to proceed to Fort Andrews, Mass., for duty at that station.

Ingalls, R. E., D.S., November 9, granted ten days' leave of absence.

Medical Corps, U. S. Navy

Changes during the week ended Nov. 19, 1910.

Shook, F. M., P. A. surgeon, detached from the naval medical school, Washington, D. C., and ordered to duty at the naval hospital, New York.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Nov. 16, 1910.

Gassaway, J. M., surgeon, leave granted Oct. 14, 1910, amended to twenty-four days from Oct. 7, 1910.

White, J. H., surgeon, granted ten days' leave of absence from Nov. 11, 1910.

Nydegger, J. A., surgeon, granted one month's leave of absence from Nov. 10, 1910, on account of sickness.

Sprague, E. K., surgeon, leave of absence granted Oct. 14, 1910, amended to read four days from Oct. 28, 1910.

Grubbs, S. B., P. A. surgeon, granted twenty-one days' leave of absence from Nov. 7, 1910, on account of sickness.

Foster, M. H., P. A. surgeon, granted seven days' leave of absence from Oct. 3, 1910, under paragraph 191, Service Regulations.

Korn, W. A., P. A. surgeon, directed to proceed to Pittsburg, on special temporary duty, Nov. 7, 1910.

Earle, B. H., P. A. surgeon, granted three days' leave of absence en route to station.

Roberts, Norman, P. A. surgeon, granted two days' leave of absence from Nov. 7, 1910, under paragraph 191, Service Regulations.

Smith, F. C., P. A. surgeon, granted seven days' leave of absence from Nov. 3, 1910, under paragraph 191, Service Regulations.

Spratt, R. D., P. A. surgeon, granted seven days' leave of absence from Oct. 14, 1910, under paragraph 191, Service Regulations.

Coffee, Joseph H., acting asst. surgeon, granted ten days' leave of absence from Nov. 5, 1910.

Schuster, B. L., acting asst. surgeon, granted twenty-two days' leave of absence from Nov. 7, 1910.

Stuart, A. F., acting asst. surgeon, leave of absence granted for thirty days from Oct. 1, 1910, amended to read thirty days from Oct. 4.

Walker, T. D., acting asst. surgeon, granted eleven days' leave of absence with pay and one day's leave without pay from Nov. 7, 1910.

White, R. C., acting asst. surgeon, granted thirty days' leave of absence from Nov. 7, 1910.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SODIUM CITRATE IN FURUNCULOSIS

To the Editor:—Will you kindly refer me to literature on the subject of Wright's treatment of suppurating lesions (as furuncles) by the use of solutions of sodium citrate and sodium chlorid?

J. L. L.

Answer.—We are unable to find any reference in recent literature to the use of sodium citrate in furunculosis. Sir A. E. Wright recommends vaccine treatment with staphylococcus vaccine guided by the determination of the opsonic index. He has recommended citrate of sodium for the purpose of preventing thrombosis in typhoid fever. Perhaps it is this use of sodium citrate that our correspondent has in mind.

HYPNOTISM AND SUGGESTIVE THERAPEUTICS

To the Editor:—Please answer the following questions:

1. Do you consider the subject of hypnotism of much value in the psychoneuroses?

2. Would it be worth while for a general practitioner to acquaint himself with the subject of hypnosis?

3. Can you refer me to literature on hypnotism and suggestive therapeutics?

W. B. N., Anderson, S. C.

Answer.—1. In competent hands, hypnotism must be regarded as a valuable therapeutic procedure for a large number of the psychoneuroses, especially those of a severe or complicated type. In many cases, however, the same results can be obtained by the methods of waking suggestion and by persuasion.

2. Before resorting to hypnotism the general practitioner should thoroughly acquaint himself with the methods of suggestion and persuasion which do not involve hypnosis. For such purpose the methods of persuasion advocated by DuBois are valuable, and a thorough study of his book is recommended. Suggestion in the hypnoidal state as recommended by B. Sidis (*Journal Abnormal Psychology,* July, 1909; also *Monthly Cyclopedia and Medical Bulletin,* August, 1909) can be employed, and in general is to be preferred to hypnotism for a practitioner who is not an expert in the latter art. If hypnotism is undertaken, Barker's suggestion that a third person should be present is worth remembering.

3. The following works may be considered representative:

Bernheim: Suggestive Therapeutics, G. P. Putnam's Sons, New York, $3.50.

Bramwell, M.: Hypnotism, Its History and Practice, Alex. Moring, London.

Bramwell, M.: Hypnotism and Treatment by Suggestion, Funk & Wagnalls Co., New York, $1.75.

Dercum: Rest, Suggestion, Mental Therapeutics, P. Blakiston's Son & Co., Philadelphia.

DuBois: Psychic Treatment of Nervous Disorders, Funk & Wagnalls Co., New York, $3.

Forel: Hypnotism, or Suggestion and Psychotherapy, Rebman Co., New York, $3.

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CHANCRE AND CHANCROID

To the Editor.—Please differentiate briefly between chancre and chancroid, describing the appearance and progress of each, within a month from infection on the labia of the female. In such a case, under which head would you class a painful, swollen, suppurating sore which is spreading rapidly? Do chancre and chancroid both come under the head of syphilis? If not, please indicate the treatment for the latter.

W. O. L.

Answer.—A chancre is the initial lesion of syphilis, and is due to the action of *Treponema pallidum*. It appears about twenty days after infection and is generally single. It usually consists of a small papule, which may ulcerate, but which produces little pus and does not tend to spread beyond its point of origin. Its secretions do not produce similar lesions in other parts of the skin of the same patient, *i. e.*, it is not auto-inoculable. The base and surroundings of the ulcer are usually of a marked hardness, but it is not painful. It leads to a general enlargement of all of the lymphatic glands, which shows no tendency to suppuration but is very persistent. Usually in the course of a month or six weeks the chancre heals, leaving ordinarily a slight scar, but it may persist longer. Spirochetes (treponemata) can be demonstrated in the secretions from a chancre and the Wassermann reaction is positive in the latter part of its course.

A chancroid is a local lesion, believed to be due to a streptobacillus discovered by Ducrey, which ulcerates rapidly, is painful, spreads extensively, produces much pus and is auto-inoculable. It appears in two or three days after infection and is frequently multiple. Only the lymphatic glands adjacent to the area of infection become enlarged, but they soon break down, forming a bubo. The base of the chancroid is not indurated. The chancroid leads to no specific constitutional affection but may produce septicemia. It does not contain treponemata and does not give the Wassermann reaction. While chancroid has no relation to syphilis, it may accompany and conceal the initial syphilitic lesion. In spite of its local character, a chancroid may pursue a chronic course and undermine the general health, producing a severe cachexia.

The ulcer described is probably a chancroid. The part should be carefully cleansed and the surrounding skin or mucous membrane should be protected as carefully as possible against auto-inoculation. A local anesthetic, like cocain, should be applied before cauterizing. The best caustic is probably the application of the thermal or galvanocautery, but if this is not available, chemical caustics may be used. The best is fuming nitric acid. A preliminary application of pure phenol (carbolic acid) may be made, by which the sensitiveness of the ulcerated surface is diminished. The phenol should be carefully removed by wiping with absorbent cotton. Then an application of pure nitric acid should be made to the surface of the ulcer. The careful removal of the phenol is essential, as there may be danger of nitric acid and phenol forming an explosive compound. When the slough has separated the resulting ulcer should be treated like any other ulcer by strictly aseptic methods. The general health should be cared for by appropriate hygienic measures and supporting medicinal agents.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

MEDICAL EXPERT TESTIMONY

The problem of medical expert testimony is one which confronts both the medical and the legal professions. Neither physicians nor lawyers alone can solve it. The only hope for its equitable adjustment lies in cooperation between the two professions. As was remarked editorially last week, this fact has been realized in Missouri by both the medical profession and the bar, and the result has been the appointment of a joint committee on medical expert testimony from the Missouri State Medical Association and the Missouri Bar Association. This committee, recognizing that the present situation in most states is absurd and grotesque, has drafted a bill amending the Missouri statutes in the hope of improving the procedure in legal battles in which medical expert testimony is necessary.

Previous efforts in this direction in other states are interesting. In only two states, Michigan and Rhode Island, have laws on this subject been enacted. The Michigan statute endeavors to regulate the abuse of medical expert testimony by removing the incentive of large fees, and provides that no expert witness shall receive as compensation in any given case a sum in excess of the ordinary witness fees, unless the court awards a larger sum. It also provides that not more than three experts shall be allowed to testify on either side as to the same issue, and that in trials for murder, in which expert opinions are required, the court shall appoint one or more suitable persons, not exceeding three, to investigate the issues involved and to testify at the trial, compensation for these experts to be fixed by the court and paid by the county. This provision takes the summoning of expert witnesses out of the hands of lawyers for the defense and also limits the amount of money which can be spent for such purposes.

The Rhode Island statute provides that any justice of the superior court may, in either a civil or criminal case, on the motion of either side, appoint one or more persons as expert witnesses. The amount of compensation for such witnesses is fixed by the court but paid by the party asking for their appointment. Such witnesses report their findings in writing to the court and their report forms part of the record of the case and may be produced in evidence at the trial. The expert witnesses are required to attend the trial and they may be cross-examined by either side. In personal injury suits, the court is authorized to require a physical examination of the plaintiff.

At the last session of the legislatures in Maine and New York, bills to regulate expert evidence were introduced but failed to pass. The Maine bill provided that the judge in any superior court might, on his own initiative, appoint one or more experts to investigate the questions at issue, who should prepare themselves to testify in relation thereto, if called on. Such experts, after having been appointed, might be called as witnesses by either side or by the court and when so called would be subject to full examination and cross-examination. Their compensation was to be fixed by the court. The New York bill provided that the justice of the supreme court should designate at least ten and not more than sixty physicians in each judicial district who might be called as medical expert witnesses by the court or by either party to a civil or criminal action in any of the courts of the state, and that such physicians when so called should testify and be subject to examination and cross-examination, and their compensation be fixed by the trial judge and paid by the county in which the trial was held. An additional section specifically provided that either of the parties in the case should have the right to call other expert witnesses, as at present.

The proposed bill in Missouri provides that any judge of any court of record in hearing any case, either civil or criminal, shall "on his own motion or that of any party therein, at any time or during the trial thereof when the ends of justice seem to require it," appoint one or more expert witnesses whose fees should be fixed by the judge and paid by the party moving for their appointment. In criminal cases, on request of the defendant, expert witnesses may be furnished at the expense of the state at the discretion of the court. Such witnesses shall be sworn to make a faithful and impartial examination of the matter submitted to them for investigation and shall report their findings in writing, such report to be filed, not as evidence, but as a basis for the examination of the expert witnesses by the court or by the counsel for either party. It will be noted that the proposed law in Missouri differs from the Rhode Island statute in that, in Rhode Island, the report of the expert witnesses is made a part of the evidence in the case. The Missouri bill further provides that either party to the cause shall have the right of examination and cross-examination. In civil suits for damages following personal injury, the judge may require the plaintiff to submit to a reasonable examination by an expert appointed by the court. The court may also require the defendant to permit of the examination of the place and cause of the injury by experts appointed by the court. Compensation is limited to ordinary witness fees, except by order of the court, and the receipt or payment of any larger sum is made a misdemeanor punishable by a fine not exceeding $1,000, or imprisonment not exceeding one year, or both.

It is evident, from the two laws enacted and those proposed, that the regulation of compensation for expert testimony is regarded as one of the most important means of correcting existing abuse. The appointment of expert witnesses by the court is unquestionably a step in the right direction. Whether the report of such witnesses should be regarded as evidence or merely as a basis for examination is for those familiar with the rules of evidence to determine. The limiting of expert witnesses to those selected by the court, and the provision for a written report on the questions at issue, should go far toward eliminating the self-constituted "expert" who, oftentimes without adequate professional knowledge or standing, and animated mainly by a desire for large fees, can be secured in almost any case to testify to nearly anything which partisan advocates may desire.

In this connection, the resolutions adopted by the Committee on Medical Expert Testimony of the American Medico-Psychological Association, which recently appeared in the *American Journal of Insanity*, are of interest. The committee's declarations relate mainly to medical expert testimony in cases in which insanity is pleaded as a defense. They are:

1. The proved rarity of wrong acquittals on the ground of insanity is the strongest evidence that the abuse of the insanity plea in criminal cases has been unwarrantably exaggerated.

2. The insanity plea is not raised as often as it should be to prevent the frequent miscarriage of justice arising from the conviction and imprisonment of insane persons whose true mental condition has not been recognized.

3. The abuses which have crept into the method of presenting medical expert testimony have been largely the result of established legal tests and proceedings, although their correction does not require radical change in the laws.

4. Inaccessibility of the evidence on both sides of the case is the chief cause of defective medical testimony.

5. Whenever possible the medical witness should not testify unless he has had an opportunity to make both a mental and physical examination of the person in whose behalf the plea of insanity is raised.

6. We consider the hypothetical question as ordinarily presented to be unscientific, misleading and dangerous to medical repute, and that the evidence on both sides should always be included in its presentation to the medical witnesses.

7. In all criminal cases, absolutely equal rights should be accorded the medical witnesses for both the prosecution and the defense for the examination of the person alleged to be insane.

8. In our judgment the judiciary should by legal enactment be allowed more latitude in enlightening the jury and enabling it to comprehend the nature and meaning of the medical testimony laid before it.

9. We recommend as advisable the adoption, wherever possible, of the so-called Leeds method of preliminary consultation by medical witnesses on both sides of the case as to its status.

10. We advocate a freer use of appointments of commissions by the court.

11. A period of hospital observation of all persons committing crimes in whose defense the plea of insanity has been raised is by far the best method yet devised for securing impartial and accurate opinions, silencing popular clamor, avoiding prolonged and sensational trials and saving expense to the state; we also advocate the enactment in every state of laws similar to those of Maine, New Hampshire, Vermont and Massachusetts, providing that such persons may be committed by the court to a state hospital for the insane, there to remain for such time as the court may direct, pending the determination of their insanity.

12. It is the sense of the association that it is subversive of the dignity of the medical profession for any of its members to occupy the position of medical advisory counsel in open court, and at the same time to act as expert witness in a medicolegal case.

13. We regard the acceptance by a physician of a fee that is contingent on the result of a medicolegal case as not in accordance with medical ethics and derogatory to the good repute of the profession, and advocate the regulation of the practice by legislation.

14. We are in favor of any legislation that will secure a definite standard of qualification for medical men giving expert testimony.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month—Third Weekly Meeting

TUBERCULOUS DISEASE OF THE SPINE

Pathology

Pathology of the tubercle. Changes in body of the vertebræ; of the processes. Secondary changes in bony structures, kyphosis, resulting deformities. Process of repair. Abscess formation. Changes in spinal cord, membranes and nerves.

Symptoms

Attitude: Movements of body, attitude when different regions are affected, rigidity of spine.

Pain: Cause, location, diagnostic value. Eye symptoms, cough, dyspnea.

Deformity: Angularity.

Abscess: Location, pointing, prognosis.

Paralysis: Location, partial or complete, reflexes, sphincters.

Treatment

General Treatment: Fresh air, sunshine, diet, medicinal treatment.

Local Treatment: 1. Bed treatment, indications, appliances. 2. Ambulatory treatment by jackets and braces; indications, detail methods of application, appliances used for deformities in different regions.

Treatment of abscesses: Expectancy, aspiration, incision.

Treatment of paralysis.

Treatment of diseased vertebræ.

State Boards of Registration

COMING EXAMINATIONS

California: Los Angeles, December 6-9. Sec., Dr. Charles L. Tisdale, 929 Butler Bldg., San Francisco.

Delaware: Regular, Dover, December 13-15; Homeopathic, Wilmington, December 13-15. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.

Kentucky: Louisville, December 15-17. Sec., Dr. J. N. McCormack, Bowling Green.

Maryland: 1211 Cathedral St., Baltimore, December 13-16. Sec., Dr. J. McPherson Scott, Hagerstown.

Ohio: Cincinnati, December 6-8. Sec., Dr. George H. Matson, State House, Columbus.

Pennsylvania: Regular and Homeopathic, Philadelphia, December 6-9; Eclectic, Harrisburg, December 6-9. Secretary of the Medical Council, Dr. Nathan C. Schaeffer, Harrisburg.

Virginia: Lynchburg, Dec. 20-23. Sec., Dr. R. S. Martin, Stuart.

New Jersey June Report

Dr. H. G. Norton, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 21-23, 1910. The number of subjects examined in was 9; total number of questions asked, 135; percentage required to pass, 75. The total number of candidates examined was 41, of whom 34 passed and 7 failed. The following colleges were represented:

PASSED

College.	Year Grad.	Per Cent.
Johns Hopkins University	(1910)	83.7, 88.6
College of Physicians and Surgeons, Baltimore	(1910)	78.1, 81.9
Harvard Medical School	(1908)	82.4
Columbia University, College of Physicians and Surgeons	(1902) (1910)	91; 84.2.
New York Homeopathic Med. College and Hospital	(1907)	78.5
University of Pennsylvania	(1896) (1903) (1905) (1907) (1910)	79.7; 78.5; 81, 83.6, 83.8; 88.2; 78.6, 80.4, 80.5, 80.8.
Jefferson Medical College	(1905) (1908) (1909) (1910)	78.1, 85.9; 83.9; 76.6; 83.9, 84.2, 84.3, 84.5.
Hahnemann Med. College and Hospital, Philadelphia	(1910)	78.6, 86
Medico-Chirurgical College, Philadelphia	(1910)	88.2
Woman's Medical College of Pennsylvania	(1910)	80.5, 81.1, 84.7.
University College of Medicine, Richmond	(1908) (1909)	79.5; 77.9.

FAILED

Baltimore Medical College	(1908)	70.6
Univ. of Michigan, Coll. of Medicine and Surgery	(1880)	68.2
Long Island College Hospital	(1909)	72.1
iladelphia	(1897)	70.3
ospital, Philadelphia.	(1908)	72.8
Richmond	(1910)	72.7
ıly	(1896)	72.1

The following questions were asked:

[Answer any ten questions on each paper, but no more.]

ANATOMY

1. Describe the coccyx. Name the muscles attached to it. 2. Describe the ileocecal valve. What is its function? 3. Give the coverings of a femoral hernia from within outward. 4. Give the minute structure of the kidney. 5. Describe the inferior radio-ulnar articulation. 6. Describe the suprarenal glands. State their function. What would be the effect of their removal? 7. Describe the glands and villi of the intestines. 8. Give the foramen of exit, the distribution and the function of the oculomotor nerve. 9. Where does the glossopharyngeal nerve rise and what structures are supplied by this nerve and its branches? 10. Locate and describe the lymphatics of the front of the thorax. 11. Give the origin, course and branches of the temporal artery. 12. Name the principal centers of organic function in the medulla oblongata. 13. Locate the respiratory center. 14. From what portions of the cortex cerebri do the arm, face and leg receive their motor impulses? 15. What would be the effect of a transverse section of (*a*) the anterior root, (*b*) the posterior root of a spinal nerve?

HISTOLOGY—PATHOLOGY—BACTERIOLOGY

1. Describe the rôle of uric acid in gout. 2. Give etiology of valvular heart disease. 3. How does aortic insufficiency affect the circulation of the blood? 4. Define anemia. 5. Define immunity. 6. Describe a microscope and such accessories as you would use in histologic work. 7. Describe preparation of objects for microscopic examination. 8. Describe the cell body. 9. Describe the process of mitotic cell division. 10. Define chromatolysis. 11. What are bacterins? 12. What is the effect of an injection of bacterial vaccine? 13. Describe preparation of and varieties of culture media. 14. Give technic of making plate cultures. 15. Give method of examining sputum for detection of tubercle bacilli.

CHEMISTRY

1. Discuss arsenic and mention its properties, uses and compounds. Give antidote for poisoning by arsenic. 2. Name three elements in the potassium group with their symbols and atomic weights. 3. Give the symbol and quantivalence of sulphur. What are the principal oxygen compounds of sulphur? In what form is it

used as a germicidal and disinfecting agent? 4. (*a*) State the normal reaction of urine (*b*) To what is it due? (*c*) State the variations in normal specific gravity (*d*) What pathologic conditions are indicated by a very high or a very low specific gravity? 5 Give the chemical formula and derivation of acetic acid Mention the most important acetates 6 Give the names and formulas of three gases used for producing general anesthesia. 7. What are enzymes? Mention those of animal origin and where found 8 Give test for the detection of bile in the urine 9. Which are the principal opium alkaloids and with what acid are they combined in opium? 10 What is cholesterin? In what pathologic condition is it found? 11 Give the chemical formulas and common names of magnesium hydrate and magnesium sulphate 12 (*a*) What is tartar emetic? (*b*) What are the symptoms of poisoning by tartar emetic? 13 (*a*) What is hemoglobin? (*b*) In what pathologic condition is hemoglobin found in the urine? 14 (*a*) What is the ammonium radical? (*b*) Give chemical formula of the ammonium compound contained in aromatic spirit of ammonia 15 (*a*) Give the source and chemical formula of common salt (*b*) How are chlorids chemically recognized in urinalysis?

HYGIENE AND MEDICAL JURISPRUDENCE

1 Describe the methods usually employed for the sterilization of drinking water 2 (*a*) What conditions of soil tend to promote health? (*b*) What conditions tend to impair health? 3 State (*a*) the main source of infection in tuberculosis; (*b*) what personal hygienic measures may be employed to prevent its spread? (*c*) what disinfectants and what method of application will tend to prevent house infection? 4 Outline in detail the precautions that should be taken in the treatment in scarlet fever to prevent the spread of the disease 5 What diseases spread by infection from person to person? 6 What temperature should be maintained in the sick room in the treatment of (*a*) croup, (*b*) pneumonia, (*c*) typhoid fever? 7 Name the diseases regarded as quarantinable 8 Define food and name two which are in themselves complete or perfect foods 9 What are the legal obligations between physicians and patient? 10 What are the essentials of a thorough medical examination of an applicant for life insurance? 11 What constitutes expert medical testimony? 12 Name the post mortem signs external and internal of recent drowning 13 In signing a certificate of insanity what facts relating to the patient should be recorded? 14 Define a wound in its medicolegal sense 15 In witnessing a will, what facts should satisfy the physician as to the mental competency of the testator?

MATERIA MEDICA AND THERAPEUTICS

1 Name (*a*) the source, (*b*) the preparations, and (*c*) the effects of ergot 2 Differentiate the symptoms of atropin and morphin poisoning 3 (*a*) By what drug, and (*b*) by what method may local anesthesia be induced? 4 Explain the theory of the action of antitoxin 5 (*a*) Mention five preparations having antiseptic properties; (*b*) Give adult dose of each 6 Describe (*a*) the method of administration and (*b*) the results to be accomplished by the hot pack 7 State (*a*) the source, (*b*) the action, and (*c*) the therapeutic uses of strychnin 8 (*a*) What remedies may be used in septic condition of the alimentary canal? (*b*) Give dose of each 9 Outline a dietary in (*a*) chronic rheumatism, and (*b*) chronic interstitial nephritis 10 Write a prescription for any ailment in which iodid of potassium may be used 11 Specify (*a*) three official preparations of aconite; (*b*) adult dose of each 12 Give (*a*) the source (*b*) the physiological action, and (*c*) the infantile dose of santonin 13 (*a*) Prescribe in proper form for diarrhea in a child 4 years of age (*b*) Explain the action of each ingredient 14 Give (*a*) the therapeutic uses, and (*b*) the adult dose of terebene 15 Define (*a*) alteratives, (*b*) antipyretics, and (*c*) mydriatics

HOMEOPATHIC MATERIA MEDICA

Give characteristic indications for 1 Hepar in corneal ulcers 2 Aconite in facial neuralgia 3 Arsenicum iodid in coryza Compare 4 Causticum and bryonia in aphonia 5 Silica and aurum in bone disease 6 Nux and alumnia in constipation 7. Ipecac and natrium mur in malaria Name five remedies prominently useful and give the characteristics of one in 8 Skin diseases. 9 Typhoid 10 Acute nephritis 11 Apoplexy 12. What is a homeopathic prescription 13 Define the simillimum. 14 Give three essentials of a homeopathic prescription. 15. Give treatment for renal calculus.

OBSTETRICS AND GYNECOLOGY

1 Give a comparative description of the virgin uterus and the uterus after child bearing 2 State procedure in case the head refuses to engage the pelvic brim 3. How may rupture of the uterus complicating delivery be recognized? How should such a condition be managed? 4 Under what circumstances during labor may obstetric anesthesia become advisable? Mention an appropriate anesthetic and describe the method of administration 5. What may cause delay in the second stage of labor? How should such a condition be managed? 6 What are three most dangerous forms of uterine hemorrhage? 7 Outline your treatment of the foregoing types of uterine hemorrhage 8 Describe toxemia of pregnancy and state what may be done to prevent or to relieve this condition 9 Under what circumstances is induction of abortion permissible and how is it safely performed? 10 Name the varieties of salpingitis and give briefly the etiology and diagnosis. 11. What are the causes of pelvic abscess? Describe method of surgical treatment. 12 Mention the causes and state the management of cystitis in the female 13 Mention the prodromal symptoms of puerperal eclampsia Describe the management of puerperal eclampsia 14. Give the causes, diagnosis and treatment of prolapse of the ovary 15 What is ophthalmia neonatorum? How prevented? How cured?

PRACTICE OF MEDICINE

Differentiate: 1 Acute pericarditis and acute endocarditis 2. Apoplexy and acute alcoholism 3 Cancer and ulcer of stomach 4 Chancre and chancroid 5. Diabetes and acute glycosuria 6 Epilepsy and hysteria 7 Hemoptysis and hematemesis 8 Intestinal and hepatic colic. 9 Organic and functional heart disease 10 Pneumonia and pleurisy with effusion. 11 Pyelitis and cystitis 12 Scurvy and purpura 13 Typhoid fever and acute tuberculosis 14 Edema glottidis and retropharyngeal abscess 15 Cerebral concussion and cerebral compression

SURGERY

1. Give diagnosis and treatment of intracapsular fracture of the femur. 2. Give technic of posterior gastro-enterostomy. 3 Etiology and treatment of senile gangrene 4. Give causes, symptoms and treatment of phlebitis 5 Mention the causes of non-union of fractures 6 Give causes, diagnosis and treatment of abscess of the liver 7. How would you treat a penetrating wound of the trachea? 8 Describe acute suppurative osteomyelitis of the tibia 9 Gonorrheal arthritis; diagnosis and treatment 10 Differentiate between fracture of the neck of humerus and subcoracoid dislocation. 11. Discuss etiology of thrombosis. 12. Symptoms and treatment of acute pancreatitis 13. Diagnosis of floating kidney. 14. Mention the conditions that may necessitate amputation of an extremity. 15 Etiology and treatment of cystitis

South Dakota July Report

Dr. F. W. Freyberg, secretary of the South Dakota State Board of Medical Examiners, reports the written examination held at Lead, July 13-14, 1910. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 32, of whom 26 passed and 6 failed. The following colleges were represented:

College	Year Grad.	Total No Examined.
PASSED		
George Washington University	(1908)	1
Rush Medical College	(1895) (1897) (1906)	3
Northwestern Univ Medical School	(2, 1909) (2, 1910)	4
Coll of P & S, Chicago	(1901) (1907) (1909) (3, 1910)	6
Chicago Homeopathic Medical College	(1894)	1
Bennett Medical College, Chicago	(1909)	1
Univ of Iowa, Coll of Medicine and Surgery	(1903)	1
Univ of Minn, Coll of M & S	(1908) (1909) (1910)	3
Hamline University	(1908)	1
Creighton Medical College	(1908)	1
Syracuse University	(1910)	1
Eclectic Medical Institute, Cincinnati	(1897) (1907)	2
Queen's University, Kingston, Ontario	(1908)	1
FAILED		
Bennett Medical College	(1909)	1
Hahnemann Med Coll and Hospital, Chicago	(1901)	1
Medical College of Indiana	(1892)	1
Drake University	(1902)	1
Sioux City College of Medicine	(1896)	1
Bellevue Hospital Medical College	(1892)	1

The following questions were asked:

OBSTETRICS

1 At what stage can you make a positive diagnosis of pregnancy? Give findings. 2 Give the most important features in the management of a breech presentation. 3. Describe fully the indications for and the application of forceps 4 Describe the four most common positions of the fetus during pregnancy. 5 Give your treatment of a two and one-half months' pregnancy with adherent retroversion 6 How would you treat a labor, with child in normal position, inefficient, distressing pains having been in progress twelve hours, with no apparent dilatation? 7 What is adherent placenta and your method for removal of same? 8. Give directions for care of mother during the lying-in period 9 When should you repair a lacerated perineum? 10 With the head down on the perineum and severe labor pains with prospect of laceration, what is the proper method to pursue?

EYE, EAR, NOSE AND THROAT

1 Describe and give treatment for dacryocystitis 2. Discuss corneal ulcer, giving etiology, prognosis and treatment. 3 Define astigmatism, synechia, hypopyon, myopia, epiphora. 4. Diagnose and treat a case of (a) iritis; (b) pterygium. 5 Treat a severe puncture of the eyeball 6 Give symptoms and treatment of hypertrophied turbinated bodies 7 Give treatment for purulent inflammation of middle ear What dangers are apprehended? 8. Discuss the relation of adenoid vegetation and otitis media in children 9 Give four common symptoms caused by nasal obstruction. 10 Give anatomy of larynx and treat a case of laryngitis.

CHEMISTRY

1 Define an element, an atom, a molecule, chemical force 2. State the proportions of the chief constituents of the atmosphere What action is produced on air by animals? By plants? 3 What are deodorizers? Disinfectants? Antiseptics? Give an example of each 4 Give a test for sugar in urine. Determine the quantity by the fermentation test 5 Name three alkaloidal poisons Give antidotes.

PATHOLOGY

1 Define anemia, pyemia, bacteremia 2 Name the paths of bacterial infection; the paths of extension. 3. What changes may a simple (non infected) thrombus undergo? 4 Name the various degenerations, give examples of two 5. Give the pathology of phlebitis 6 Describe the changes in the pleura in the various stages of pleuritis 7 What is the pathology of Addison's disease? 8 Name the causes and give the morbid anatomy of acute poliomyelitis 9 Give the pathology of tuberculosis of the hip joint 10 What are antibodies?

DISEASES OF WOMEN

1 What are the sequences of gonorrhea on the female? 2 Vaginismus—name causes, give treatment 3 How do you treat endometritis? 4 Abscess of Cowper's gland—cause and treatment 5 Differentiate salpingitis and pyosalpinx; chancre and cancer of os uteri

SURGERY

1. Differentiate first, second, third degree burns and give treatment of each 2 Define, diagnose and give treatment of shock 3 Diagnose and treat post-operative hemorrhage 4 Give differential diagnosis of cholelithiasis, carcinoma of the stomach and duodenal ulcer 5 Diagnose and give treatment of fracture of patella 6

Diagnose and give treatment of Colles' fracture 7. Outline treatment of gunshot wound; point of entrance of bullet anterior portion of chest at eighth rib, right side, general direction inward and downward, no point of exit, patient conscious and in shock 8 Give treatment of lacerated and contused wound of scalp. 9. Give diagnosis and treatment of diffuse suppurative peritonitis. 10 What are the indications for, method of and location for paracentesis of thorax?

HYGIENE AND SANITATION

1 Describe an effective method of fumigation of residence following scarlet fever 2 Give rules for and length of quarantine for (a) diphtheria, (b) scarlet fever 3 Give method of transmission and management of case of typhoid fever for the protection of attendants and members of the family 4. Give practical method of caring for the garbage of cities with from five to ten thousand population. 5. Give in detail a method for the examination of water and milk supplies for the purpose of tracing the origin of typhoid epidemic.

ECLECTIC MATERIA MEDICA, THERAPEUTICS AND PRACTICE

1 Define the terms tonic and stimulant and give examples of each 2 Name three of the best alteratives and give dose of each. 3 Name three of the best diuretics and give dose of each 4 Give the specific indications for (a) lobelia, (b) pulsatilla; (c) hydrastis 5 Name three of the best intestinal antiseptics and give dose and method of administration of each 6 Give the specific indications for gelsemium, potassium iodid, muriatic acid; also dose of each 7. Diagnose and treat a case of diphtheria 8 Give differential diagnosis between alcoholism and hemiplegia 9. Give diagnosis and treatment of spinal meningitis 10 What do you know about "blood poisoning," its cause and treatment?

MEDICAL JURISPRUDENCE

1 How would you judge as to whether fracture of the bones of a dead body had been produced before or after death? 2 Define (a) illusion, (b) delusion, (c) hallucination; (d) dementia 3 Having found the body of an infant, give evidence of its having been mature, of its having been born alive and as to cause of death 4. In a partnership business of two physicians, to what extent, if any, is the one liable for the negligence of the other, in case of a malpractice suit? 5 What constitutes malpractice in a medicolegal sense?

PHYSIOLOGY

1 How is the normal temperature of the body maintained? 2. What is the omentum and what are its chief functions? 3 Give examples of proteins, and state how and where digested 4. What is the largest gland in the body and where is it located? 5 What is the average per cent of urea in normal urine? 6 What factors assist the heart in keeping the blood circulating? 7 What is lymph? Chyme? Chyle? 8 Locate and describe the parotid gland 9. Name the different varieties of cartilage and state where each is found 10 What are the functions of the spinal cord?

THERAPEUTICS AND PRACTICE (HOMEOPATHIC)

1 What is the chief sphere of action of gelsemium? Give characteristic indications for its use 2 Compare spigelia and cactus in heart affections 3 Give symptoms and treatment of gastric ulcer 4 Give indications for arsenicum in skin diseases 5 Diagnose and treat herpes zoster 6 Give causes, symptoms and treatment of cholera infantum. 7 Name two remedies with indications for their use in dysentery 8 Diagnose and treat membranous croup. 9. Name with indications two remedies for chorea 10. Compare arsenic, hepar sulphuris and tartar emetic in pus affections

SKIN AND GENITOURINARY DISEASES

1 Give diagnosis and treatment of herpes zoster. 2 Etiology, diagnosis and treatment of urticaria 3 Diagnosis and treatment of chronic infantile eczema 4 Etiology, diagnosis and treatment of erysipelas. 5 Symptoms, diagnosis and treatment of urethral stricture

ANATOMY, HISTOLOGY AND EMBRYOLOGY

1. Give histologic description of the section of the shaft of a long bone 2 Describe the shoulder joint 3 Give a brief description of the cerebrum, naming its lobes and fissures 4 Give histologic description of a section of the stomach wall, at the greater curvature 5 Describe the thyroid gland 6. Describe the male urinary bladder and give its relations. 7 Name the muscles of mastication Give origin and insertion of two 8 Describe histologically (a) striated muscle; (b) non striated muscle 9 Describe the wrist joint, giving arrangement of bones 10 What displacement occurs in a fracture of the lower one-third of the femur? Why?

REGULAR PRACTICE AND THERAPEUTICS

1. (a) Give causes, symptoms and diagnosi [illegible] tion; (b) give differential diagnosis between [illegible] and generalized peritonitis 2 (a) Define [illegible] give etiology; (b) give clinical history of the acute and chronic forms 3 Give differential diagnosis between primary lobar pneumonia and acute pneumonic phthisis 4 (a) Define uremia and give symptoms and treatment. (b) How do the symptoms differ in uremic unconsciousness and cerebral hemorrhage? 5. (a) Give symptoms of acute poisoning by iodid (b) When is iodid contraindicated? 6 (a) What is therapeutics? (b) Give rule of dosage for children (c) Name five modes of administering drugs 7 Give causes, symptoms, diagnosis and treatment of infantile convulsions. 8 (a) Give causes and symptoms of ascites (b) Give points of differentiation between ascites and chronic peritonitis (c) What is ascites most apt to be mistaken for? 9. Define the following: myalgia, pertussis, hemicrania, petit mal, acute chorea, tetany, neurasthenia, arsenicism, aphasia and anterior poliomyelitis 10. (a) What is a hematemesis? (b) Name five chief causes (c) What are the points of contrast between hematemesis and hemoptysis?

BACTERIOLOGY

1. (a) What are bacteria? (b) Describe the different forms. 2 (a) Give Neisser's method of staining (b) What is suspected when above stain is used? 3 (a) Give formula of the most commonly used stain for "acid proof" bacilli. (b) Give method of staining "acid proof" bacilli 4 (a) What are blastomycetes? (b) Where found? 5 (a) What is understood by lack of fermentation? (b) Where found? (c) What bacteria are most commonly found in lactic fermentation?

Book Notices

GYNECOLOGICAL DIAGNOSIS By Walter L Burrage, M.D., Fellow of the American Gynecological Society Cloth. Price, $6 Pp 656, with 207 illustrations New York. D Appleton & Co., 1910.

Burrage has endeavored to present in this new text a practical work written entirely from the clinical point of view, only the salient points of anatomy and the more recent views of pathology being summarized in each chapter. Like Winter's famous work, this text is divided into two parts, the first covering general considerations, the latter being special diagnosis. Clinical history and interpretation are considered in the first chapters, which include such general topics as menstruation, puberty, menopause, pain, constipation, etc. The physical examination of the patient is discussed at length in the succeeding four chapters.

In speaking of the barriers to the entrance of infective bacteria to the peritoneum, no mention is made of the influence of the normal vaginal flora. One short chapter is given over to the examination of the abdomen, the methods of which are excellently discussed, but the author limits his subject later to gynecology according to the strictest construction of that term. The relaxed abdominal wall, as a factor in female ills, is but incidentally referred to and the subject of enteroptosis is covered in a half page. Cystoscopy is gone into fully, and Kelly's method is described and freely illustrated. The first portion of the volume closes with a chapter devoted to the significance of the chief symptoms of pelvic disease, dysmenorrhea, intermenstrual pain, menorrhagia and metrorrhagia, amenorrhea, leukorrhea, dyspareunia, sterility, etc.

The author has devoted two-thirds of his work to special diagnosis. He notes the difficulty of classification of endometritis, and wisely makes no attempt to furnish one of his own. His description of pathology is surprisingly meager; here again the clinical point of view is in control. Burrage describes erosion as showing "no inflammatory action accompanied by destruction of the epithelium as in ulceration. The surface squamous epithelium, which normally covers the cervix, is removed—it is eroded—and the underlying columnar epithelium is hypertrophied." The author will have much difficulty in reconciling this view with that taught by the pathologist.

Pelvic inflammation, congenital anomalies, fibromyomata, and malpositions of the uterus are covered ably, while no fresh contributions are offered. The differential diagnosis, as elsewhere in the volume, is presented in parallel columns. Malignant disease of the uterus is considered clinically, but on a pathologic classification The importance of early diagnosis is emphasized, but here again the histopathology is vague. The author at one time speaks of chorio-epithelioma as being composed of placental tissues (villi) and at another as if it were identical with a placental polyp.

A chapter is devoted to the ovary, and one to the tube. Pfannenstiel's classification of ovarian tumors is accepted and the differential diagnosis is elaborated with special reference to the intraligamentous variety, torsion, and the results of infection. Extra-uterine pregnancy is exceptionally well described and illustrated, and the importance of differential diagnosis is properly emphasized. Diseases of the vagina, vulva, urethra, bladder, uterus and rectum are taken up adequately, each in a separate chapter, the author emphasizing his belief that the bladder and rectum are too often neglected. He includes a chapter devoted to diseases of the breast, based on Bloodgood's classification.

The gynecologic affections of infancy and childhood are wisely given a place, and such topics as vulvovaginitis, masturbation and enuresis are considered. A chapter on the menopause and old age concludes the volume.

Altogether it may be said that this work is a practical one for the general practitioner who is always most interested in the clinical side of his work. Its great fault, as has been noted before, is the lack of laboratory method as applied to diagnosis. Special text-books are lamentably weak on gynecologic pathology, and surely if there is a place for such minutiæ it is in a text devoted exclusively to gynecologic diagnosis.

Dislocations and Joint-Fractures. By Frederic J. Cotton, A.M., M.D., *First Assistant Surgeon to the Boston City Hospital.* Cloth. Price, $6 net. Pp. 654, with 1,201 illustrations. Philadelphia and London. W. B. Saunders & Co., 1910.

One of the most commendable features of Cotton's book is its originality. The volume embodies the results of the author's study and personal experience with a lot of material, and this lends to it a distinctive and unique value. There is a place in surgical literature for a book on joint-injuries, fractures and dislocations, especially since the *x*-ray in the last decade has caused many long-accepted views to be modified and revised. Every experienced surgeon will concede the importance of joint-injuries, knowing that permanent disability sometimes follows treatment by even the most expert. Dr. Cotton has covered this field of joint-injuries most completely; his style is clear and lucid, and the text is embellished by a great number of good original drawings and reproductions of radiograms. There is no question that it is of great advantage for the author to be his own artist, a circumstance which tends towards the elimination of unimportant details, and the accentuation of the essential features of a drawing.

In the chapter on "Generalities" are collected many facts worth knowing regarding fractures, and much sound advice and wise teaching. There are taken up in succession fractures and luxations of the jaw, spine, sternum, ribs, clavicle and scapula. Then follows a chapter on the shoulder, its various luxations, their mechanism and treatment, and the different varieties of fractures about the shoulder-joint. The elbow is given due prominence, with its anatomy, landmarks and luxations. The fractures about the joint are described clearly and in detail, and the value of the text is enhanced here as well as throughout the book by the profuse and fitting illustrations. In the same thorough manner the author treats of the wrist, hand, pelvis, hip, knee, ankle and foot.

Dr. Cotton preserves his equilibrium and keeps on an even keel throughout. There is no tendency towards dogmatism, nor are there any radical views expressed about treatment. His ideas about immobilization, massage, and passive motion are sane and moderate, and would be acceptable to the majority of surgeons. Every case of joint-injury is a study by itself, and the surgeon, in diagnosis and treatment, must apply those general principles underlying all fractures which he has acquired by years of study and experience. Thus he drifts away from the notion of treating all cases of a certain type of fracture with Dr. So-and-So's splint. Treatment is accomplished by the use of the simplest kind of retention apparatus. The author's attitude towards the operative treatment of fractures is that indiscriminate operating is uncalled for. He essays to teach that in some types of cases the fractures do best if operated on early; others do well without operation, if treated properly from the beginning. Proper emphasis is laid on the taking of *x*-rays after, rather than before reduction of a fracture, to control the position of the fragments before it is too late to reset. Faulty position is due rather to improper treatment than to errors in diagnosis.

The book deserves hearty acceptance by the general practitioner as well as by the surgeon. The paper is good, the printing is clear, and the bookmaking leaves nothing to be desired.

Genesis. A Manual for the Instruction of Children in Matters Sexual, for the Use of Parents, Teachers, Physicians and Ministers. By B. S. Talmey, M.D., Former Pathologist to the Mothers' and Babies' Hospital and Gynecologist to the Yorkville Hospital, New York. Cloth. Price, $1.50. Pp. 194. New York: The Practitioners' Publishing Co. (1910).

The author calls this "a manual for the instruction of children in matters of sex." It is intended to be put into the hands of teachers and parents, not of children. It consists, first, of matter going to prove the necessity for such instruction, and, second, of an outline of instruction intended to lead children's minds by various ways, chiefly through explanation of the phenomena of reproduction in the lower orders of life, gradually to a proper understanding of sexual physiology and hygiene in human beings. The general plan proposed is unexceptionable, but not original.

As a "manual of instruction," the book is not practical. The biologic facts presented are far too complicated and are described in language entirely too technical to be suitable for children. Very few teachers and still fewer parents would be capable of selecting, out of the many offered, the few essential facts and of presenting them in such simple form that children would be able to grasp them. In fact, the technical language might be rather appalling to a "grown-up" with no special training in science or interest in biology. Only a person with exceptional gifts as a teacher could really get much out of it.

A feature which should receive careful attention in a book intended for the instruction of the young in this subject is the proper coordination of the subject. The sexual physiology of plants, for instance, should be taught incidentally to the general subject of botany. The necessity for proper coordination has scarcely received in this book the emphasis it deserves. The possibility of giving an exaggerated perspective by taking facts out of their context is one which should not be overlooked. A book for this purpose ought to be written by someone possessing real knowledge of children and a practical acquaintance with educational methods.

Diseases of the Colon and Their Surgical Treatment. (Founded on the Jacksonian Essay for 1909.) By P. Lockhart Mummery, F.R.C.S., Jacksonian Prizeman and late Hunterian Professor, Royal College of Surgeons. Cloth. Price, $3.25 net. Pp. 322, with 88 illustrations. New York: William Wood & Co., 1910.

This monograph is founded on the Jacksonian Prize Essay for 1909. The book is well illustrated with figures in the text and inserted colored plates. It is exhaustive and up to date, and the author's expressions of judgment are sensible. For instance, he says, "The fact that human beings can live without a colon is, however, no proof of its uselessness and at present the evidence brought forward to prove that the colon is a useless and effete portion of the alimentary tract is anything but convincing." The first two brief chapters treat of the anatomy and physiology of the colon. Cannon, Elliott and Smith and Hertz are given credit for their recent interesting work on its physiology. The next chapters are on morbid physiology, bacteriology and diagnosis. The author has shown by experiments that if the colon is cleaned thoroughly it will not become distended with gas, which must be interpreted to mean that the gas causing distention is due to fermentation in the feces. Further on he says of postoperative meteorism, "I have never seen it, nor been able to find an instance of it except in cases when there were obvious possibilities of some infection."

Comment cannot be made on all the diseases of the colon discussed by the author. Mucous colitis the author believes to be a true inflammation, and not a neurosis. He bases his belief on numerous cases in which during surgical operation evidence of inflammation was demonstrable. Olive-oil enemas are recommended as the best medicinal treatment. Some cases persist in spite of all treatment, and for these surgical aid has been sought. The author's analysis of the various operations which have been resorted to is most interesting. He recommends appendicostomy, and the subsequent persistent washing of the colon through the appendix. He discusses such surgical procedures as have been resorted to in extreme cases and can approve only of washing the colon through the appendix, which gives relief and sometimes effects a cure.

The Ear and Its Diseases. By Albert A. Gray, M.D., Laureate of the Lenval Prize in Otology, International Medical Congress, 1909. Cloth. Price, $4.25. Pp. 388, with 123 illustrations. New York: William Wood & Co., 1910.

This is a compact book of 388 pages, bringing otology reasonably well up to the year 1910. The chapters on "Acoustics," "Anatomy and Physiology" are clear and well illustrated; and the chapter on "Methods and Principles of Investigation" is one of the most useful in the book, and clarifies the different aural tests (including those of Barany) so that an ordinary man can understand them. There is a practical chapter on "General Semeiology and Therapeutics," and a short chapter on "Nasal and Pharyngeal Affections," and then follow the chapters on the various diseases of the ear, which are good and comprehensive. The chapters on mastoid surgery are unsatisfactory and poorly illustrated. It really is a pity that a book containing so many good illustrations should be damaged by the presence of a considerable number of those old, crude and behind-the-times illustrations from Politzer and others. Mastoid surgery has advanced enormously since these old prints were made, and it is too bad to have them still appearing in modern text-books. The stereopticon pictures are a novelty, but their real usefulness might be questioned.

Second Annual Report of the Michigan Association for the Prevention and Relief of Tuberculosis for 1909-1910. Containing Statement of Work Accomplished—Report of Convention at Ann Arbor—Report of Local Associations—State Needs—Report of Secretary and Treasurer. A Brief of the Year's Work. Submitted by the Secretary, Aldred Scott Warthin, M.D., Ann Arbor, Mich., Feb. 26,1910. . Paper. Pp. 216, with illustrations.

This is a record of the splendid work done in Michigan against tuberculosis in 1909-1910. It is a strong appeal for substantial encouragement in the work, made by setting out graphically and forcibly the tremendous expense of this preventable disease and the resulting loss to the state in dollars as well as in lives. This pamphlet contains several valuable papers on the management and methods of eradication of the disease, with illustrations of tents and tent colonies for the outdoor treatment, as well as reports from the local associations in the state, and a synopsis of what has been accomplished in the way of state and local sanitary legislation. There are many suggestions that should be of value to other state associations pursuing this work.

Biology, General and Medical. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia. Price, $1.75 net. Pp. 440, with 160 illustrations. Philadelphia: W. B. Saunders Co., 1910.

The latter-day methods of attacking the problems of function and disease peculiarly emphasize the close relationship and importance of biology to medicine. Not only is this true as to cytology, morphology and the chemistry of the cells, but also as to the chemistry and functions of the body as a whole, the problems of infection, immunity, mutilation, regeneration, heredity and senescence, and the grosser phenomena of parasitology and parasitism, all of which are most essential to a modern understanding of the science of medicine and the most enlightened methods of curing disease. In this brief work the author has treated the subject in a way to be of the greatest value to students of medicine.

A Text-Book of Botany and Pharmacognosy. Intended for the Use of Students of Pharmacy, as a Reference Book for Pharmacists and as a Handbook for Food and Drug Analysts. By Henry Kraemer, Ph.D., Professor of Botany and Pharmacognosy, and Director of the Microscopical Laboratory, in the Philadelphia College of Pharmacy. Fourth Edition. Cloth. Price, $5 net. Pp. 888, with 2,000 illustrations. Philadelphia: J. B. Lippincott Co. (1910).

The botanical portion of this work has been rewritten, especially that bearing on the morphology and classification of the angiosperms. The addition of about forty pages treating of the microscopic analysis of the crystalline forms of some of the important plant constituents will be of value in the detection and study of these substances. The work has, moreover, been brought up to date by including the results of the researches published during the past two years.

The Extra Pharmacopeia. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B., Lond., D.P.H. Fourteenth edition. Morocco. Price, 12 shillings net. Pp. 1054, with supplement, Organic Analysis Chart, by W. Harrison Martindale, Ph.D., Pharmaceutical Chemist. Morocco. Price, 3 shillings 6 pence net. Pp. 80. London: H. K. Lewis, 136 Gower Street, W. C., 1910.

This volume furnishes in a convenient form a large amount of detailed information on pharmaceutical and medical subjects, especially in relation to articles not contained in the pharmacopeia. The new edition contains some important changes. New chapters are introduced on lactic acid bacilli, organic arsenic compounds, iontophoresis, radium, etc. Vaccine therapy, the Wassermann test, trypanosomiasis, examination of stomach contents and the flavoring of medicines are among the subjects discussed.

The Practitioner's Visiting-List for 1911. Leather. Price, $1.25. Pp. 192. Thirty Patients per Week. Philadelphia: Lea & Febiger, 1910.

"The Practitioner's Visiting-List" combines, in a neat pocket book, well bound in leather, a convenient record for the physician's visits and professional engagements, and much information that he is likely to need on his daily rounds, such as tables of doses, poison antidotes, etc.

Medicolegal

Construction of Medical Practice Acts with Reference to Certificates and Verification Licenses—Requirements for and Construction of Restricted Certificate.—Presumptions as to Acts of Boards.—Right to License

The Supreme Court of Texas says, in State Board of Medical Examiners vs. Taylor and wife (129 S. W. R. 600), that the latter parties sought by mandamus to compel the board to issue to Mrs. Taylor the verification license to practice medicine provided for by section 6 of the act of 1907. A district board of medical examiners had issued to her, in 1889, a certificate stating that they had examined her and "find her qualified to practice the branches of obstetrics and diseases peculiar to women and children, as required by the laws of the state of Texas." Under this she practiced medicine from its date, but the State Board refused any evidence of authority to practice, except a license to practice obstetrics only.

The provision of the act of 1907 above referred to requires the issuance by the present board of the "verification license" on production of documents sufficient to establish "the existence and validity" of the "valid and existing license heretofore issued by previous examining boards." What the verification license is to be the law does not expressly say; but its name and the purpose for which it is required plainly indicate that it is to be merely the evidence of the continuance of authority to practice as before, neither adding to nor taking from that authority. Pre-existing lawful authority is thus recognized and continued in force by compliance with the law. Therefore, if it was true that the first certificate was a valid license to practice medicine at all, either generally or in the branches mentioned in it, it must follow that the plaintiffs were entitled to a verification license to continue in force such authority as it had conferred.

The law formerly regulating the licensing of physicians, and which was in force when the certificate in question was issued, provided that it should be the duty of the board to examine thoroughly all applicants for certificates of qualification to practice medicine, in any of its branches or departments, on anatomy, physiology, pathological anatomy and pathology, surgery, obstetrics and chemistry, and when satisfied as to the qualifications of an applicant should grant to him a certificate to that effect, which should entitle him to practice medicine.

For the State Board it was contended that the certificate granted to Mrs. Taylor showed by its statements that the requirement that she should be found qualified in all those subjects was not complied with, and that it was issued on a finding by the former board that she was qualified only in obstetrics and in diseases peculiar to women and children, and that she was not qualified in the other subjects named in the statute. If it were true that the certificate showed all this, it would probably follow that the board so transcended its authority in extending a license of any character as to make its action void, since it was true that the statute did not admit any one to practice without the examination in all the prescribed subjects, resulting in the satisfaction of the board of the applicant's proficiency therein. But the court cannot say that the certificate meant that, consistently with the presumption that the board did its duty, which presumption must be indulged unless its action showed the contrary. The most that could be conceded was that a certificate so worded might be used to cover up a state of facts such as that which it was thus asserted to show affirmatively. It could not even be admitted that those facts would be fairly consistent with the truthfulness of the certificate, assuming the members of the board knew their duty. They said they had examined the applicant as required by law, which meant that they had examined her in all the named subjects and that they had found her qualified to practice the branches named. They could not truly have said that she was so qualified, in the sense of the law they were sworn to follow, unless they were satisfied that she possessed the knowledge required by that law of all the prescribed subjects.

All that rendered the certificate ambiguous or questionable was the mention of particular branches, and that might be explained by the fact that the statute plainly contemplated that there might be applicants who intended to confine their practice to particular branches or departments, which made it natural. and not improper, in such cases, to mention the branches or departments in the certificate, without restricting its meaning as to the scope of the examination and of the qualifications of the applicant. The statute proceeded on the conviction that qualification to practice in any branch or department could only be attained through adequate knowledge of the subjects named, and the court thinks it should be presumed that a board of medical gentlemen, selected because of their own proficiency, would proceed on a like conception, and would not issue a certificate affirming fitness to practice a branch without being satisfied themselves of the adequacy of the information of the person licensed concerning those things declared to be essential to that fitness.

The language, "When the board shall be satisfied as to the qualifications of an applicant, they shall grant him a certificate to that effect," meant no more than that the certificate should state that they were satisfied as to his qualifications to practice medicine, and a certificate in that language would have entitled an applicant to practice in all the branches or departments, or in particular branches or departments, as he might choose. The certificate in question, if the board understood their duty and spoke the truth, implied as full an examination and as complete qualifications as if it had been the more general one just instanced, since, under the statute, no one could be qualified, as was certified, to practice in the diseases peculiar to women and children without the required knowledge of the subjects mentioned. The provisions referred to did not apply to females practicing midwifery.

The question of whether the certificate entitled Mrs. Taylor to practice medicine generally, or restricted her to the branches mentioned, was not involved in this case. The State Board were not required to enlarge or diminish her authority, but only to issue to her a verification license to have the effect already explained. The judgment of the district court required them to issue only such a verification license as required by the act of 1907, "according to the provisions and wording" of the former certificate, and to that the Supreme Court thinks that the plaintiffs were entitled.

Liability for Negligent Communication of Small-Pox

The Springfield (Mo.) Court of Appeals had, in Franklin vs. Butcher (129 S. W. R. 428), a suit brought by a mother to recover damages for the alleged negligent communication of small-pox to her minor son. The defendant asked that the jury be instructed that the plaintiff could not recover unless she had proven that the defendant communicated the disease of small-pox to her son after he, the defendant, himself became aware of and knew that he was afflicted with said disease, and that he so communicated said disease by recklessly, carelessly and negligently bringing himself into contact with the plaintiff's son. Also, that the plaintiff could not recover unless the defendant wilfully or intentionally communicated the disease of small-pox to the plaintiff's son after the defendant had knowledge that he was afflicted with that disease. But the court thinks that these instructions were properly refused. If the defendant negligently and carelessly communicated the disease of small-pox to the plaintiff's son, it was immaterial whether it was done wilfully or intentionally, and it was also immaterial as to how it was done, if it was negligently done.

In the companion case of Hendricks vs. Butcher, decided on the same day (129 S. W. R. 431), the same court further says that it is familiar law that before an action will lie for negligence some duty must be neglected on the part of the party charged. But the court has no hesitancy in holding that any one afflicted with the disease of small-pox, which is known by every one to be a highly contagious disease, owes to every one the duty so to conduct himself as not to communicate this disease to them, after he becomes aware that he is afflicted with it. Hence, if the defendant knew that he was afflicted with small-pox, it then became and was his duty to keep away from other persons, or should other persons approach him, to notify them of the fact so that they might protect themselves.

Villages May Tax Occupation of Physicians

The Supreme Court of Nebraska, in reviewing the case of the Village of Dodge vs. Guidinger (127 N. W. R. 122), affirms the right of villages in that state to lay out and collect a tax on the vocation of a physician. The state statute gives authority "to raise revenue by levying and collecting a license tax on any occupation or business within the limits of the city or village, and regulate the same by ordinance." The defendant contended that practicing medicine is neither a business nor an occupation, but a profession; that, since the statute and the ordinance in question were silent concerning professions, the tax sought to be collected was void. But, in the court's opinion, a physician practicing medicine is engaged in an occupation within the meaning of the statute, and the plaintiff village under the legislative grant of authority had power to levy and collect a tax on the defendant's occupation or business.

Again, the defendant argued that the village might license only such vocations as it might regulate in the exercise of the police power, and that the practice of medicine was not subject to such regulations. But the statute authorizes the imposition of occupation taxes for the purpose of raising revenue. The taxing power, therefore, was the source of the village's authority to demand from the defendant the tax in question. The power of the legislature to raise revenue by levying a license tax on occupations is no longer an open one in Nebraska.

Removal of Garbage Controllable in Interest of Public Health

The Court of Appeals of Maryland says, in Schultz vs. State (76 Atl. R. 592), that it cannot be seriously contended that an ordinance which deals with garbage, house offal or other refuse, animal or vegetable matter, is not one which has a direct relation to the police power, or that it is not the duty of the city in the interest of the public health or comfort to assume the regulation and control of such matters. The fact that this accumulation contains fresh scraps of animal and vegetable matter does not prevent the extension of the police power of the city over the whole subject. More particularly, it holds that it was a valid exercise by the mayor and city council of the city of Baltimore of the police power vested in the city by its charter to pass an ordinance providing that no person, except employes of the city engaged in public work, or persons under contract with the city engaged in public work, should convey any garbage, house offal or other refuse, animal or vegetable matter through any street, etc., of the city, without having first obtained a permit so to do from the commissioner of health, and then only in the manner prescribed in said permit.

Society Proceedings

COMING MEETINGS

Southern Surg. and Gyn. Assn., Nashville, Dec. 13-15.
Western Surg. and Gyn. Assn., Chicago, Dec. 19-20.

SOUTHERN MEDICAL ASSOCIATION

Fourth Annual Meeting, held at Nashville, Nov. 8-10, 1910

The President, Dr. W. W. Crawford, Hattiesburg, Miss., in the Chair.

President's Address: Advances in Medical Education

Dr. W. W. Crawford, Hattiesburg, Miss.: It is not enough to say that there are a few good medical colleges, our full duty shall not have been discharged until we have witnessed the disappearance of the last inferior one. The proper adjustment of this question must contemplate a four-fold educative need: 1. The profession must be made to appreciate that an over production of medical colleges means an over production of poorly equipped physicians 2 The layman must be brought to realize that there is a difference in medical degrees, so that he may demand higher standards 3 State legislatures must be awakened to their responsibility 4 The medical student himself must be convinced that the best is not too good for him

Safeguarding Society From the Unfit

Dr A B Cooke, Nashville Vasectomy is not specified as the method of sterilization in the Indiana law, but its advantages over other methods are obvious Orchidectomy is a mutilating operation, and one of considerable gravity, yet I am persuaded that it should be recognized and specified as the only method permissible in rapists Human nature will never rise superior to the idea that this type of criminal merits punishment, and punishment of a character which will render a repetition of the crime forever impossible As a preventive, particularly in the south, where this evil is most prevalent and most abhorrent, the legal infliction of one such penalty would have a more salutary effect than many lynchings or even burnings at the stake While the foregoing remarks have been directed to habitual criminals, they are just as applicable to the larger class comprehended under the general term "defectives" or "degenerates" That the importance of this great question is coming to be generally recognized is evidenced in the fact that such widely separated states as Kansas, Delaware, Indiana, Connecticut, Michigan, and New Jersey have enacted laws regulating marriage, while Utah, Oregon, California, Connecticut and possibly others have followed Indiana's lead in legalizing the sterilization of criminals and degenerates It is yet too early to point to definite results from the operation of these laws But when the crucial test of time shall have been applied, I believe it is reasonable to predict that crime and degeneracy will be largely decreased and the world be correspondingly better and happier

DISCUSSION

Dr George H Price, Nashville This subject contains two principal ideas, namely, the restriction of marriage, or the throwing around marriage such safeguards and barriers as will prohibit and prevent, if possible, the reproduction of such individuals as are a constant menace to society It is a difficult matter to secure legislation because there has been a lack of uniformity on the part of the medical profession looking to this great problem of safeguarding the public, nevertheless the medical profession should be foremost in advocating restrictive measures

Dr Francis Dowling, New Orleans Physicians of the medical department of Tulane University have taken up this matter and have received letters from those who are interested in securing such legislation as will safeguard the public Some have suggested that gonorrhea and syphilis should be among the reportable diseases to boards of health like cases of diphtheria or scarlet fever The people of the State of Louisiana are already agitating this question

Dr John H White, New Orleans There is one difficulty growing out of the particular remedy advocated by Dr Sharp of Indiana for the class of defectives under discussion, and that is, the operation of vasectomy would be utilized by the roué as fitting him to practice his nefarious life without risk of being caught, and I believe that is a thing which should be carefully considered before resorting generally to this operation A law providing for this operation should guard against men voluntarily submitting to this operation for that very reason

Dr Jere L Crook, Jackson, Tenn The time has arrived when the medical profession should take active steps toward bringing about consummation of the ideas embodied in Dr Cooke's paper.

Dr Isadore Dyer, New Orleans In the last few years this question has been discussed as one of supreme moment in connection with eugenics I believe that professors of eugenics, criminologists and scientists, who are interested in the solution of this problem, are all satisfied that the aphorism of Oliver Wendell Holmes, that a man's education should begin with the education of his great grandfather, is very pertinent and that we ourselves for the sake of our own people should establish at least this one law of protecting our decendants from the possibilities to which they have been exposed in regard to criminals and defectives

Dr George H Price, Nashville, offered the following resolutions, which were adopted

Whereas, The medical profession of the South believes that its highest office is to prevent disease and its most sacred obligation to safeguard those interests of society on which health and happiness depend, and

Whereas We are convinced that those interests are seriously menaced by the utter disregard of the procreative function which characterizes the present system of managing criminals and degenerates, therefore be it

Resolved By the Southern Medical Association, in regular annual session assembled that the members endorse as wise and beneficent the laws of Indiana regulating marriage and providing for the sterilization of habitual criminals and other degenerates

Resolved That these laws be commended to the earnest consideration of state medical societies, with the suggestion that persevering effort be made to incorporate their principles into the laws of each state

Exophthalmic Goiter

Dr W D Haggard, Nashville The four cardinal symptoms of this disease, tachycardia, goiter, tremor, and exophthalmos, are unmistakable An acute toxic case presents high temperature, extreme restlessness, tumultuous heart action, sometimes up to 200, and nausea and vomiting which may become frequent and distressing There may be epigastric and abdominal pain It looks and is like a violent septic intoxication Active delirium, followed by stupor, precedes death In the four acutely fatal toxic cases that I have observed, the patients all had temperatures up to 106 F, shortly before the end In the chronic cases with exophthalmos the eye symptoms are important Surgical treatment has proved superior to any other It can be shown statistically to offer the best results, and at present early operation is the best treatment It is comforting to realize that the disease can be very generally cured if taken in time The very acute or advanced cases are very grave surgical cases The present surgical efforts are directed to decreasing the blood supply by ligation of the arteries and thus reducing the amount of secretion, or to lessening the amount of secreting surface by partial thyroidectomy Mayo estimates that one fourth of the patients *come for relief in a condition precluding anything but ligation*, whereas two thirds can have the larger lobe and isthmus removed without the ligation of the opposite superior thyroid artery Ligation is especially recommended by Mayo in cases hardly severe enough to require thyroidectomy The cases in which I have performed ligation, while few in number, have been satisfactory in the relief of the symptoms In two cases, it was employed simply as a preliminary step in the graduated *operation, but one of the patients was so much improved* at the end of four months that the removal of one lobe of the gland is apparently not required at this time If, at least, in one case ligation had been substituted for thyroidectomy, a death from postoperative hyperthyroidism might have been averted

DISCUSSION

Dr B L Wyman, Birmingham, Ala The medical treatment of hyperthyroidism has been practically a failure in the majority of cases, and in recent years I have referred my cases to the surgeon I would emphasize the importance of early diagnosis Some time ago I referred a patient to Dr Mayo I advised operation years ago, but the woman deferred it until I felt that a thyroidectomy was impossible, and even the operation of ligation of the superior thyroid, which was finally performed by Dr Mayo, did not result favorably The woman had a dilated heart when she went to Rochester, and hence the operation was not followed by a favorable result If we hope to accomplish anything in the treatment of hyperthyroidism, early diagnosis and prompt operation are absolutely essential.

Bones and Joints

Dr. J. B. Murphy, Chicago: When there is a lesion in the neighborhood of a joint which causes inflammation or thickening, or adhesion of the capsule, if the surgeon wants to overcome deformity the capsule must be dealt with as one would deal with bone or with any other inelastic material. The outer fibrous capsule has a feeble vascularity. It practically never becomes inflamed; it is never the seat of a primary lesion. It never becomes tuberculous. It has an inner lining which is known as the synovial lining. The surface is represented by endothelial cells which are arranged close to each other, and they seal up the surfaces of both the synovial membranes just as accurately as the epithelial cells seal up the surface of the skin. If surgeons are going to do work on joints, one of the things they must observe is that the joint has an enormous resistance against infection, and they must become the greatest respecters of this endothelial layer in all work that involves the surgery of the joints. The time to attack a joint is when Nature or the surgeon has artificially prepared the joint in rendering it immune against easy infection.

Ankylosis can be avoided in practically every case of acute infection of joints. The moment the practitioner speaks of draining joints that are infected, he is assuming responsibility for an ankylosis. In an infection in a joint, to save it from destruction, it is necessary to relieve the joint of tension and the products of infection. This can be done by aspiration. But one can give the patient more relief than a hypodermic injection by putting on Buck's extension and separating the pressing surfaces that are inflamed.

Education of the Specialist

Dr. E. C. Ellett, Memphis, Tenn.: The solution of this and other similar problems will only be fairly settled when the whole thing is put under the control of the national government. With the establishment of a national department of health it may be feasible to map out a course of study and hospital work which a man must complete satisfactorily before he can appear before the world as a specialist in any department of medicine.

Treatment of Trachoma

Dr. H. H. Martin, Savannah, Ga.; In order to effect complete cure in chronic trachoma, surgical and medical treatment must be combined as neither is sufficient in itself. Of the surgical methods the one which I have called the Coover method is the most satisfactory from all points of view. For local application a solution of copper sulphate in strength of from 5 to 10 per cent. has no rival, but its use must be begun soon after the operation, and continued for eight weeks. Any attempt to sterilize the sandpaper is troublesome, unsatisfactory and unnecessary if the conjunctiva be scrubbed with bichlorid of mercury after the completion of the operation.

Malarial Manifestations in the Eye

Dr. M. H. Bell, Vicksburg, Miss.: My observations are based on the symptoms found in thirteen cases of eye trouble due to malarial infection. Corneal ulceration was present in eleven cases, and two entirely distinct types of ulceration were noted. In seven cases the common dendritic ulceration was present, and in the other four the ulcers were of the simple round variety, which I have designated acute herpetic. The acute type of dendritic ulcer I have found only in an acute malarial infection, and it has always responded readily to appropriate antimalarial treatment in combination with the application of tincture of iodin to the ulcerated area, and the usual local treatment employed for any corneal inflammation. I have found this form of ulceration recurring at times, especially in cases in which the treatment of the malarial infection has been stopped in too short a time, and for the prevention of recurrence, I have always placed most reliance on small doses of arsenic continued for some weeks.

The Artificial Leech in Acute Mastoiditis

Dr. U. S. Bird, Tampa, Fla.: My experience includes nine cases. Clinically they were all instances of typical acute mastoid infection, middle-ear disease, high temperature, mastoid swelling, and pain. In every case the middle ear has been freely opened without relief. In all of the cases operation seemed indicated, and in one case the patient was sent to a hospital for that purpose. In some heat was used, but in most it was unnecessary after the leech. Calomel was given at first as a routine measure. Improvement was noted at varying intervals after leeching. At times it was immediate; it usually occurred the same day. In one case the leech was applied in the morning with temporary relief. In the evening the patient was suffering so much that he was sent to a hospital with instructions that he be prepared for operation next morning. Next morning he was feeling better; operation was postponed, and he recovered without further incident. In every case relief was permanent, no further active treatment being necessary.

Episcleritis

Dr. O. Dulaney, Dyersburg, Tenn.: There is no specific for this disease. Most good is obtained from constitutional treatment. One is always safe in administering mercury; the salicylates and alkalines, also the iodids play their part, especially in cases of specific origin. The best results are obtained locally by the use of mild sedative lotions, and by keeping the pupils well dilated with atropin sulphate. Hot applications should be frequently used, much depending on the severity of the disease. The ointment of yellow oxid of mercury is very efficacious, and an ointment of boric acid will often give good results.

The Heath Mastoid Operation

Dr. M. M. Cullom, Nashville, Tenn.: This operation is safer than the radical operation, as there is less danger of intracranial involvement following it. There is practically no danger of injuring the facial nerve. There is no injury to the hearing and the operation is often followed by marked improvement in hearing power. Suppuration diminishes rapidly and postoperative healing takes place sooner than after the radical operation. It can be easily converted into the radical operation, if desired.

(To be continued)

MASSACHUSETTS ASSOCIATED BOARDS OF HEATLH

Quarterly Meeting, held at Boston, Oct. 27, 1910

The President, **Dr. Henry P. Walcott**, Cambridge, in the Chair

Typhoid Fever

Dr. Charles V. Chapin, Providence, R. I. [For the Committee on Typhoid Fever]: We believe that there is a lack of control of typhoid at present, and we urge local boards of health to be more energetic. Cases should be reported, and should not only be filed, but the boards of health should show to the physician some evidence that his report has been considered as valuable, and among other methods the milk supply in each case should be investigated. Earlier diagnoses should be made and in order to be of assistance the boards of health should offer the physician proper aid in diagnosis, such as facilities for blood-tests, etc. Directions should be given by physicians to nurses how not to spread it. Disinfection and isolation are recommended, and the placarding of house, front and back. Special attention should be given to any member of the family who handles foodstuffs, and the spread by this means avoided. If isolated, some means of determining the termination of isolation should be announced, as, for instance, when the patient has had a normal temperature for two weeks, as results tend toward the opinion that in the large majority of cases no bacilli are excreted after a two-weeks' absence of fever. Except with carriers the above period appears correct, and their cases have no rule. Hexamethylenamin should be given as a routine treatment. When a simple bacteriuria only is present, the results of hexamethylenamin are marked; 0.3 gm., given three times a day, has been known to clear the urine in twenty-four hours. Occasionally painful micturition occurs following its ingestion and in that event it is wise to discontinue its use. It is valuable in carriers, but does not always effect a cure. Other preventatives to the spread of the disease are to screen privy vaults from flies and build them rat-proof. It is recognized that all over the world the diminution of typhoid follows the lessening of the number of privy vaults.

Our list of recommendations is: 1. Local boards should require reporting of cases. 2. State boards, and their local boards, should offer to physicians facilities for examination of blood and feces. 3. Each patient should be visited in twenty-four hours by an agent of the board in relation to the matter of isolation and disinfection. The disinfectants should be furnished free by the boards. 4. Local boards should investigate milk and water-supply of each reported case. 5. Houses should be placarded. 6. Patients should be isolated. 7. Hexamethylenamin, 0.3 gm. three times daily, should be given for two weeks after a normal temperature has continued. 8. The two weeks following a continued normal temperature is sufficient, except in those handling foodstuffs, when the rule should be four weeks. 9. Typhoid carriers should not be allowed to perform work requiring the handling of food material. 10. Typhoid carriers should be under the observation of boards of health and required to report monthly. 11. A case on a farm should require that the authorities in all places receiving a supply of food from the farm should be notified. 12. Protect all privy vaults. 13. Exterminate the typhoid fly.

DISCUSSION

Dr. George W. Fitz, Boston: It is a simple matter to compile recommendations; the real problem is to enforce them. It is questionable whether they should be left to the discretion of local boards; it seems rather that they should be mandatory. If this matter is left simply to the publication of this report, little will be accomplished. We should have legislation to cover the matter.

Prof. William T. Sedgwick, Boston: I believe that this committee should confer with the Massachusetts State Board of Health. Recognition of typhoid as a dangerous disease is the kernel of the whole matter. When this is done we can treat it as a contagious disease and a menace to the public health. There should be no politics in the appointment of health officers, and they should be recommended by well-recognized health bodies.

Cholera

Dr. M. J. Rosenau, Boston: Cholera has a way of its own which we do not understand. It smolders for years and then breaks out. It is pandemic at present. We know its causal agent and its method of spread, but do not know why the epidemics begin. It acts like a spark spreading to others and a conflagration occurs. It is very interesting to compare the present cholera situation with the last epidemic—that of 1892. When cholera spread from the Orient to Europe in 1892 and threatened to come to this country, President McKinley was prevailed on to order a quarantine of twenty days on all vessels, and extravagant precautions far beyond the needs of the case were put into operation. I think that those who know most about conditions were sorry that these extreme measures were taken. It is a good sign of the real progress made in controlling the disease that plans are being made and carried out now without fuss, and when it is stated that there is very little danger, people have faith in that assertion. In 1892, sanitarians called attention to the fact that if cholera should get into the United States there would be great danger of a water-borne contagion in such cities as Philadelphia, Chicago, Lawrence and Lowell. These cities have so improved their water supplies now that a great epidemic is practically impossible, and we are safe from any such danger of infection as was suggested in 1892. Cholera was once considered a water-borne disease, as was typhoid. It is perfectly true in certain definite instances that water has been a vehicle for its spread, but in most instances—as in typhoid—it is by contact. We are well guarded against cholera. Even if it should get in, with all the improved methods of sanitation we should not have any trouble at all with it.

DISCUSSION

Dr. C. V. Chapin, Providence, R. I.: What is the duty of a health officer when he receives a list of suspects from the government officials?

Dr. M. Rosenau: He should have a trained agent see the people twice a week for from two weeks to a month. The ideal plan would be to require the suspect to report daily, and should he fail to report, to hunt him up.

Poliomyelitis

Dr. Robert W. Lovett, Boston: The epidemic character of this disease has attracted the special attention of medical men. It is increasing in frequency in all parts of the world. In the five years ending 1904, 300 cases occurred. In the five years ending 1909, 8,000 cases were reported, of which five-sevenths were in the United States. This increase is too great to be affected by the claim that the increase is due to the fact of reporting being more often compulsory at present. Analysis of the facts at our disposal results as follows: Immigration has not kept pace with the increase of cases and so apparently is not a factor. Scandinavian immigration has not even kept pace with the increase of cases, and so its prevalence in Norway and Sweden has not been an influential cause. Passenger traffic has increased but not at all commensurate with the cases of infantile paralysis, neither by steam nor electric roads. Automobile traffic has much increased and may be found to be a factor. Seasonable elements on being considered are not of much aid, as fruit appears to be without influence, and dust with presence or absence of rain has equal value for and against its spread. In New England it has spread with absence of the usual precipitation and in the northwest it has spread in the face of unusual rain. The influence of insects is of difficult estimation and demands further study. The epidemics appear to come in two-year periods and this fact may or may not be of value in the study. River valleys seem to be more prone to invasions than coast towns, but with marked exceptions, as at Boston and New Bedford, Mass., often an epidemic is followed by immunity of a section, but this is open to exceptions.

The State Board of Health is about to investigate as to the greater or less prevalence of animal diseases concurrent with the spread of poliomyelitis, particularly in sections showing the disease in epidemic form. It is not certain whether the danger of communication is over after the acute stage is finished. It seems wise to require isolation and absence from school.

DISCUSSION

Dr. John L. Morse, Boston: Early diagnosis is impossible at present. No special symptom of throat, stomach, bowels, or any organ is valuable. I have not found sweating or prostration, and these two symptoms are more often absent. Diagnosis is not possible until paralysis appears, except in epidemics or in patients previously exposed. In atypical cases also, no diagnosis is possible, as the patient may have the disease and recover without diagnosis. In a colony of children at the seashore eight had similar symptoms and ten days later one child had partial paralysis; I have no doubt that all the cases were cases of this disease. Lumbar puncture is of no practical importance in the diagnosis. Hexamethylenamin is of no value after paralysis occurs, although it may be of use in the incubation period. After paralysis has set in it may still kill a few germs. The child should be isolated, but the length of time is uncertain. I should prefer boards of health to designate a given time of isolation, even if not correct. Most physicians do not wear gowns while visiting these cases.

Dr. Edward H. Stevens, Cambridge: We should seek to allay public unrest and so publish the facts that the people may not fear an epidemic of such proportions and results as to cause a panic.

MINNESOTA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Minneapolis, Oct. 6-7, 1910

(Concluded from page 1833)

Re-Operated Colles' Fracture; Thrombosis of Mesenteric Vein

Dr. Arthur T. Mann, Minneapolis: The fresh Colles' fracture had been treated months before in the usual way. The result was a wrist with marked deformity and loss of motion. Four months later a good surgeon had undertaken to correct the wrist by an oblique incision through the radius of about 45 degrees, pushing the lower fragment downward and forward. When the splints were removed four and a half weeks later the position apparently was satisfactory. The fragment slowly returned to its original position or worse. Five months later I operated, making a curved incision through the radius, curving a little farther forward below than above in order to gain a little extension, as the fragment was rotated downward and forward. Retaining splints were kept on eight weeks before union seemed firm. The patient now shows, three months after the operation, that the line of the radius is excellent, with a slight loss in length from the original impaction, and that all wrist motions are much improved and still gaining. In the case of thrombosis thirty-six hours after childbirth, symptoms of obstinate constipation and moderate tympanites had come on. Cathartics and enemas gave some result, but the conditions gradually increased, especially the tympanites; no special pain, though the abdomen was a little tender, more on the right side than the left; only occasional nausea and vomiting. An indistinct mass the size of a small child's head was made out in the upper right side of the abdomen, tympanitic, only moderately tender. The stomach area seemed dilated to the level of the umbilicus. Diagnosis, obstruction of the bowels from some cause not yet clear. I advised operation at once. The entire small bowel was found dilated, the large bowel down to the splenic flexure enormously so, while it was empty and collapsed below this point to the anus. The transverse colon was the apparent stomach area and the cecum and ascending colon was the mass felt. The appendix was found stretched tightly about the root of the mesentery with its tip adherent well up on the left side of the mesentery, thus constricting its vessels.

Typhoid Fever With Perforation

Dr. George Douglas Head, Minneapolis: From a study of the 495 reported cases, I conclude, first, that mortality is lowest in persons up to 15 years of age and beyond 25 years; second, that the mortality is lowest (50 per cent.) where perforation took place in the first week and highest in the third and fifth weeks of the disease; third, that the earlier the diagnosis is made and operative relief is applied the lower is the mortality. Of the 133 operations, sixteen were performed within three hours of the onset of symptoms, with 50 per cent. of recoveries. Of the twenty-five patients operated on between three and six hours, 44 per cent. recovered. Of the twenty-two patients operated on between six and twelve hours, 20 per cent. recovered, and of those between twenty-four and forty-eight hours, 11.1 per cent. recovered.

Pyelography

Dr. William F. Braasch, Rochester, called attention to the fact that surgical diseases of the kidneys are now being diagnosed largely by the use of the Roentgen ray and the cystoscope. Although they are of much value independently, of late the tendency has been to use the two methods combined. Thirty radiographs selected from several hundred illustrated a variety of conditions and were shown to be of value in the diagnosis of the following conditions: (1) The normal pelvis. (2) Mechanical pelvic dilatation. (3) Inflammatory pelvic dilatation. (4) Deformity accompanying renal neoplasm. (5) Localization of stone within the kidney. (6) Differentiation of extra-renal shadows. (7) Cystic kidney. (8) Solitary kidney. (9) Congenital anomalies of renal shape and position. (10) Hydroureter. (11) Identifying ureteral obstruction. Attention was called to the fact that although these plates were frequently of great practical value in the diagnosis of the various conditions demonstrated, nevertheless we must add this data to the other data derived from the cystoscope and the Roentgen ray, as well as those obtained from the case history and physical examination. A diagnosis is to be arrived at only by combining the data derived from the various sources.

DISCUSSION

Dr. William J. Mayo, Rochester: Dr. Braasch has been too modest in his claims for pyelography. I have operated on many of the patients whose kidneys have been pyelographed by Dr. Braasch, and I would like to acknowledge my indebtedness to him for the accurate diagnosis which enabled me to plan my work in advance, which made the operation so much easier and added so greatly to the safety of the patient.

Pyelography tells the size of the pelvis, the exact situation of the kidney with relation to the ribs, etc., and as to whether or not the kidney is infected in cases of hydronephrosis. The operation can then be made from behind, laterally, or anteriorly, as space or other conditions may indicate. In stone in the kidney pyelography tells whether the stones are in the pelvis, in which case they are masked in the pyelograph, but if they are in the cortex, they will show outside the pelvis. In two cases, radiographs showed stones apparently in the right kidney, pyelography demonstrated that the shadows were not in the kidney at all, but outside of this organ, and operation showed them to be gall-stones in an outlying gall-bladder and of just the right density to give shadows, which is not often the case in gall-stones. Pyelography enables one to make a diagnosis of hydroureter and to determine the size and position, as well as the location of the stricture.

In the diagnosis of certain tumors lying in the region of the kidney, the method is of the greatest differential value, showing at once the position of the kidney. In the genito-urinary field, as in so many others, we find that direct inspection by means of cystoscopy, ureteral catheterization and pyelography are clearing up old obscure cases of supposed bladder disease and proving that such diseases are extremely rare, although bladder complaints are extremely common. These complaints find their source in tuberculosis, stone, stricture, tumor and other diseases of the kidney and ureter, in posterior urethritis, prostatic disease, diseases of the seminal vesicles, etc. From a surgical standpoint this method of diagnosis enables the surgeon to work from the plan of the master diagnostician.

Mixed Tumors of the Parotid Glands

Dr. E. S. Judd, Rochester: We have observed forty-one tumors in the parotid, four in the submaxillary, none at all in the sublingual. In twenty-two of our series of forty-one cases the tumors were in the right parotid. The majority of tumors occurred in the second decade. The youngest patient was 15 years of age, the oldest 71. Twenty-five of the series were females. Average duration was 8 years. One case in our series was of one month's duration. In nine of our series of forty-one operated cases, the endothelial element predominated. Five were sarcomatous, three mixed-cell tumors undergoing sarcomatous change, ten were recurring growths. Twenty-seven of these patients have recently been heard from. Twenty-four state that they are "perfectly well." Three have a local recurrence; two of these had predominating sarcomatous elements at time of operation.

Pulmonary and Circulatory Complications Following Surgical Operations

Dr. E. H. Beckman, Rochester: This report is based on 4,530 consecutive cases operated on in St. Mary's Hospital, during the first eight months of 1910. Mortality rate in this series was almost the same in both classes; six deaths in pulmonary and five in the circulatory. Ether was the anesthetic used. Local anesthesia with cocain in a few cases. In the series of 4,530 there were thirty-seven complications, most of them extremely mild. There were six deaths in the group of thirty-seven cases; and fifteen cases of pleurisy, most of them mild. One patient died after a splenectomy. In eleven, symptoms occurred in the first week; four in the second week. Twelve cases of bronchitis, all mild types, none fatal. Ten cases of lobar pneumonia, five of which were fatal. Two of the fatal cases were in comparatively young adults with simple operations. Both developed delirium tremens, and died of complicating lobar pneumonia. The other three were debilitated old men with arteriosclerosis. One of them was 69 years of age, operated on for carcinoma of the lip and glands. The second, 80 years old, was operated on for stone in the urinary bladder. The third, 65 years of age, was operated on for gall-stones, and carcinoma in the head of the pancreas. Twenty-seven cases of complication were related to circulatory system. Phlebitis seventeen, embolism six. Of the seventeen cases of phlebitis there were three of the right side, fourteen of the left. Thirteen cases followed abdominal operations, four extra-abdominal. Five were infected cases, two at time of operation; three mild wound infections developed later. All of the cases appeared in the second week. No deaths. Six cases of embolism, two cerebral, were both fatal. Three of the four pulmonary cases were fatal. One occurred on first day, one fifty-six hours after operation, two on the eighth day, two on the ninth. In only one case was there evidence of infection either at operation or at autopsy. Ages of patients, 35, 43, 45, 57, 60.

Sudden Death in Cardiovascular Disease

Dr. John Grosvenor Cross, Minneapolis: Sudden death in cardiovascular disease occurs from various causes: (a) rupture of the heart wall; (b) rupture of an aneurysm; (c) pulmonary embolism; (d) coronary narrowing or blocking; (e) direct pressure of the diaphragm upon the heart, from distended stomach or intestines; (f) heart-block syncope; (g) thrombus in the heart; (h) air embolism; (i) sudden lack of venous blood-supply to the right heart, as occurs in large hemorrhage, or after abdominal blows; (j) a large group of cases of sudden death occur in myocardial weakness, either acute (toxic or infectious) and chronic in the acute forms, the muscle fibers show cloudy swelling or even fatty change; in the chronic forms there may be fibroid patches or individual muscle fibers, showing cloudy degeneration or fatty changes. Syphilitic changes are also found. The heart-muscle may become exhausted by prolonged tachycardia, as in hyperthyroidism. Most of these hearts also show degenerative changes. Valvular lesions are only to be considered as a factor in cardiac weakness. The possibility of sudden death in angina pectoris, Corrigan's disease, Stokes-Adams disease, aneurysm, recurrent attacks of acute pulmonary edema, should be considered. Besides these, in the presence of thrombosis of systemic veins, and in septicemia, the likelihood of embolism must not be forgotten. Degenerative changes in the ascending aorta are generally accompanied by coronary involvement and may lead to sudden death. Acute or chronic myocarditis predisposes to a like end, in the largest group of cases, from failure of the power of heart contraction, when there is a sudden call for increased heart power. The reserve power of the heart and true heart competency is the essential thing to be determined in prognosis. In an estimation of such conditions, sphygmographic tracings of the heart and vessels, as well as blood-pressure measurements, are a great aid to careful clinical examination.

How Shall We Treat Appendicitis After the First Forty-Eight Hours?

Dr. J. E. Moore, Minneapolis: Physicians and surgeons are now quite unanimous in the opinion that all cases of acute appendicitis should be operated upon during the first forty-eight hours, providing proper facilities and a competent operator are at hand. Without these requisites the mortality is greater with than without operation. After the first forty-eight hours the infection has usually extended beyond the confines of the appendix, and the surgeon can only hope to assist Nature, for he cannot remove the whole of the infection. When the surgeon is called on the third, fourth, or fifth day and the patient is doing well with a temperature below 102 and a pulse below 100, what is his duty? The experienced operator should operate at once, but should be content to remove the appendix and establish drainage. The occasional operator should wait until Nature has done her best. When the surgeon is called late and the patient is doing badly, with a temperature above 102 and a pulse of over 100, it is his duty to operate at once because these are Nature's signals of distress, indicating that she needs assistance. The removal of the appendix and the establishment of drainage meets the indications. More than this is meddlesome surgery. When the surgeon is called late, when the whole abdomen is swollen and boggy, and a so-called general peritonitis is present, what is his duty? A helpful operation is surely indicated. Remove the appendix if it is in evidence, but do not make an extensive search for it. Make two or more incisions and drain both flanks and the bottom of the pelvis with large rubber tubes. Excessive breaking down of adhesions and irrigation of the abdomen do more harm than good, and experience has proved that they are not necessary. Do not cork up the openings with gauze and call that drainage. The position of the patient after operation is of little consequence, so he should be made as comfortable as possible. The pressure within the abdomen is about 16 pounds to the square inch and the pus is bound to follow the line of least resistance, which is out through the openings. Do not give cathartics after operation, as they interfere with Nature's efforts to bring about a cure.

Death Certificates

Dr. H. E. Robertson, Minneapolis: Rarely has this subject been dealt with among physicians as it deserves. The ideal state must record the birth, the diseases, and the causes and date of death of each of its citizens. The importance of the subject is not impressed on us in our medical education and we rarely hear it discussed in our meetings. Improper returns are often found: "Sarcoma" and "carcinoma" with no mention of location; "Brain fever" and "Lung fever," obviously obsolete terms; "Accidental injury" with no statement of the accident; "Cardiac embolus following operation," the operation not being indicated. Remedies are recommended as follows: First, provide for some instruction in the subject in our medical schools. Second, make more frequent use of clinical and laboratory tests in the study of our cases. Autopsies are far too infrequent. Third, use more care and thought in filling in the certificate. The standard form requires a "cause of death" and "contributing causes." These may often be determined by the following rule: When resistance has become so lowered by some definite recognizable disease that other definite affections ensue and the patient dies, then we have a cause of death in the first disease and a contributing cause or causes in those that follow. For example, in a subject of acute nephritis dying of bronchopneumonia, the cause of death is "acute diffuse nephritis" and the contributing or secondary cause is "bronchopneumonia." Fourth, frequent consultations are necessary between boards of health, other statistical bureaus, and medical associations in order to maintain a uniform standard and promote better working relations on this important subject.

Management of the Puerperium

Dr. Fred E. Leavitt, St. Paul: The routine use of ergot following parturition is of no demonstrable value. Asepsis rather than antisepsis is needed in the care of maternity patients—soap and water instead of bichlorid. Extensive lacerations can be repaired much better a few days after labor than at the time of delivery. Good results are obtained if properly attended to even after a week. For the main stitch, silkworm and not catgut ought to be relied on. In getting up after delivery, the most satisfactory results follow when patients are encouraged to resume their natural habits soon afterward. After practicing this method for several years, both in private and hospital work, the results are found most satisfactory. In the first place, the patient's strength is not dissipated by remaining passively in bed, the bed pan is dispensed with in bowel and bladder movements, drainage is favored by the sitting posture, involution is more rapid and more complete, displacements less frequent, etc. After normal labors the patient is encouraged to continue her accustomed habits as far as she is inclined, both as to eating and activities. Even on the first day she may be propped up in bed for meals, get up onto the commode, move freely in bed; the third day she may be up in a comfortable chair for an hour or two, the next day twice as long, and so on, so that by the end of a week she is able to be all over the premises. The assertion is made that no case of disability in women can be traced to too early rising after childbirth.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Fort Wayne, Sept. 18-30, 1910

(Concluded from page 1837)

Malaria in Indiana

Dr. Ada E. Schweitzer, Indiana State Board of Health: There was a time when malaria was a veritable plague in Indiana. A short story of its ravages in the early days and of the ideas and practices of the pioneer physicians, demonstrates the remarkable efficiency of scientific preventive medicine, assisted, as in this case, by industrial and commercial interests. In addition to consulting the usual sources of historical facts, a letter was written to the physician longest in practice in each of the ninety-two counties in the state. Replies were received from only twenty-eight counties, but these were so distributed over the state that every section was represented. These twenty-eight replies do not by any means represent the total number of cases occurring in Indiana during the year. But they do furnish positive evidence that the disease has not been completely eradicated, as many physicians assert. The anopheles mosquito is to be found in almost every part of the state, and every patient, whether he imported the disease or acquired it here, is a source of infection. Hence, we have the two factors necessary to the spread of malaria. This paper is not written in the belief that malaria will ever again be prevalent in Indiana. The state is too well drained and the people are too progressive for that. But physicians should remember that malaria does exist in this state and not allow an incorrect, preconceived opinion as to its absence to influence their diagnoses in the occasional sporadic cases they are likely to encounter at any time during the summer or fall.

DISCUSSION

Dr. George D. Marshall, Kokomo: There is an idea that the anopheles mosquito is a rare one. I have been studying these mosquitoes for four years, and they are plentiful. I can go out and catch three or four of them any time I want to around Kokomo. The people do not recognize the anopheles as a mosquito. I had a case recently of a boy who had spent three months in bed from malarial fever and was being treated for malarial fever at the time. I was called in consultation and gave him quinin in solution and the fever began to disappear, although it comes back once in a while. I was called to see the boy's grandmother, who was vomiting and had a temperature of 103 F. There were mosquitoes there. A year ago a young man in Kokomo died from what I diagnosed as malaria; there was a difference of opinion, and the man was treated for tuberculous meningitis. There is a large family living in the house where this patient lived, and nearly all are ill. I found a mosquito in a shed in the yard where the children played. That's where they got the malaria.

Bacteriology, Pathology and Diagnosis of Typhoid Fever

Dr. W. Shimer, Indiana State Board of Health, read this paper, in which he formulated the following conclusions:

1. Typhoid bacilli are present in the blood of every patient ill with the disease. They appear in the blood with the fever and disappear with the return of the temperature to normal.
2. Typhoid fever is not a true bacteriemia, but is an overflow from the spleen, lymph-glands and bone-marrow.
3. The clinical symptoms of the disease are due to the invasion of the blood by the bacilli, their destruction there, and liberation of their endotoxins. These endotoxins cause degeneration of the body cells and the consequent pathologic physiology.
4. Convalescence and tissue repair begin as soon as the bacilli disappear from the blood.
5. Long-continued or chronic typhoid seems to be due to the persistence of the bacilli in the blood because of the low grade of immunity. Chronic typhoid can sometimes be cured by injecting killed typhoid bacilli.
6. Blood cultures seem to be the method by which we can make the earliest and most certain diagnosis of typhoid fever, for several reasons, e. g., because the bacilli may be in the feces without the patient having the disease; the bacilli appear in the urine rather late in the clinical course of the disease; the destruction of the bacilli in the blood stimulates the production of the agglutinins and other antityphoid immune substances, and must, therefore, appear in the blood before the Widal reaction is positive.

DISCUSSION

Dr. B. W. Rhamy, Fort Wayne: There is no doubt that blood culture is the best-known method of diagnosticating typhoid in the early stage. It is therefore to be deplored that the method cannot be utilized except by those in close proximity to a laboratory. The clot-culture mentioned by Dr. Shimer seems to offer a practical method for those who are at some distance from a laboratory, and no doubt could often be used to good advantage. This clot-culture is made from the clot which forms in the glass capsules in general use for sending blood to a laboratory for the Widal test. It would be necessary for the physician only to draw a well-filled capsule of blood, seal the tips of the capsule in the flame and send to the laboratory, with instructions to make the clot-culture in case the Widal test was negative. There is some difference of opinion among investigators as to the amount of blood necessary for the culture test. Some men advocate small amounts, as from 0.5 to 1 c.c., while others, and perhaps the majority, advise the larger amounts of from 5 to 10 c.c. or more. The reliability of the blood culture, as well as of the Widal test, depends on the stage of the disease and the severity of the infection. Duffy in 1905 gave an excellent illustration in his series of cases. In eighty-eight patients, of whom fifty-six had a temperature above 102 F., he got positive blood cultures in all fifty-six, while in twenty-three with a temperature of from 100 to 101 F., he got positive blood cultures in only ten. This evidently depended on the severity of the blood invasion with its consequent liberation of endotoxins. The advantage of the blood culture over the Widal test is in the fact that the blood in the first week contains the greatest number of bacilli, while the Widal test does not show until these bacteria have stimulated the agglutinating power of the blood. Veil (*Deutsch. med. Wchnschr.*, 1906) compares these two tests in his cases. In thirty-six cases, during the first week, blood cultures were positive in 78 per cent., while the Widal reaction was positive in only 50 per cent. Out of 110 cases during the second week, the blood cultures were positive in only 60 per cent., while the Widal reaction was present in 92 per cent. During the third and fourth weeks the blood-culture percentage steadily decreased, while the Widal percentage remained constant. From these figures, which I believe are a fair representation of the possibilities of the two methods, it seems to me that the blood culture and the Widal test should be used in conjunction in any given case, thereby obtaining a greater percentage of accurate findings, than by the use of one to the exclusion of the other.

DISCUSSION

Dr. B. V. Caffee, Terre Haute: Away from the larger cities it is hard to get culture media. About two years ago in the pathologic society in Terre Haute we demonstrated a method of taking blood culture from a medium which can be obtained in any country village. It is entirely inexpensive and, according to the author of the article describing this method—whose name I have forgotten—it is quite as good as bouillon. He takes ox-gall from the freshly slaughtered beef; he dissects out the gall-bladder, tying the end of it with a ligature, then draws the gall into a test-tube and sterilizes it. By that method, I have demonstrated the typhoid bacteria in blood that came from the ear of a typhoid patient in two cases, and it was shown to be accurate. It seems to me that this method is absolutely reliable, and that it would be an excellent thing when a person cannot get a culture medium, because it is very easy to get ox-gall and entirely without expense.

In regard to infection of attendants in typhoid hospitals, a great change has occurred in the last twelve years. Twelve years ago I saw a demonstration of the infection of typhoid nurses. I was at that time steward in one of the army hospitals at Porto Rico. We had two small regiments and a battery of artillery—less than 2,500 men. In August and September, 1898, we had in our one hospital 268 patients, the majority of whom had typhoid. Of the twenty hospital corps men who nursed these people, fifteen took typhoid; three of the remaining five had had typhoid, and so were immune. We had no protection against flies, no screens, and our water-supply was very bad. But when you compare that with the conditions in hospitals to-day, the difference is as darkness from light.

Dr. G. W. McCaskey, Fort Wayne: The making of blood cultures is within easy reach of every general practitioner. I have had a fairly large experience along this line of work, though I have not had much experience in typhoid, having been out of general practice for a good many years. Culture media can be obtained in small sealed tubes. I formerly used a tube which I devised myself, hermetically sealed, containing 50, 75 or 100 c.c. They can be used by anyone and can be kept in the office for a year. In getting the culture, all that is needed is a syringe. The physician must sterilize his own hands and the arm of the patient; the needle is then inserted, and a syringeful of blood withdrawn. Then the blood is sent to the laboratory. I use an ordinary hypodermic syringeful of blood. Every physician ought to use blood cultures in these cases; they are within easy reach. I have a case now which I think is very interesting. The patient, a woman, was taken ill 5 or 6 weeks ago suddenly, with severe intestinal pain, diarrhea and a temperature of 102 F.—irregular fever. In a few weeks the fever practically disappeared, but the hemorrhage kept up, with severe pain in the sigmoid. She was gradually going downward, but the temperature was normal. She was taken to the hospital and I thought that perhaps I had tuberculosis to deal with. I submitted some blood to Dr. Rhamy, who reported a positive Widal reaction. Meanwhile, the blood culture was developing, and I submitted that to Dr. Rhamy, and he found the bacilli. This patient was at once placed on autogenous vaccine, and improvement followed; the temperature is perfectly normal; pulse perhaps 85, and the patient is apparently convalescing. This is undoubtedly a case in which the typhoid ulcers were very deep and did not heal after the temperature got back to normal.

Dr. Frank B. Wynn, Indianapolis: One of the commonest and most perplexing situations confronting the general practitioner is to determine in the early course of a fever, whether or not he is dealing with typhoid. The young or the thoughtless practitioner sometimes makes a guess and later is obliged to retract his early diagnosis. The Widal reaction has been a help, but blood culture goes a step farther and permits still earlier diagnosis of the disease.

I think that many of us fail to realize that typhoid fever is not simply a disease of the intestines, but of various organs, notably the lymph-glands, bone-marrow and the spleen; in other words, the blood-making organs of the body. One of the important lessons taught by blood cultures is that the organisms may attack almost any part of the body. I have a case now in which the parotid is infected. Sometimes the tonsils are involved. Indeed, some assert that this is the point of first infection, but I still think that the intestine is probably the primary seat of infection, not the tonsils. The advantages of the blood cultures are: first, early diagnosis; second, the idea which they give of the general dissemination, the wide-spread potency of the disease; and third, it seems to me that these cultural studies will be of immense practical benefit to us in differential diagnosis. A case came under my observation in which during the first five days the patient was delirious, with ordinary clinical picture of typhoid minus the eruption on the abdomen. The blood cultures showed a growth that was so extreme that it was thought there must be some contamination of the medium. The blood was drawn again, and the second test showed that this man did not have typhoid at all, but was suffering from a streptococcus meningitis.

Dr. E. Schmauss, Alexandria: I have not seen a case of typhoid in which extensive ulcers of the intestinal tract were not present. I have never seen anything diagnosed as typhoid which did not involve the intestinal tract. Now, the statement made by Dr. Wynn, that in typhoid we have an involvement of the whole body, is, of course true, but I dislike to allow the inference to be drawn that typhoid is not a disease of the intestinal canal primarily, and only secondarily involving the entire system. We would not claim that pneumonia is not a disease of the lungs, or that meningitis is not a disease of the brain, because we find the infective material in other parts of the body. I think we can safely say that typhoid is primarily a disease of the intestinal tract. It is said by some that the tonsils are the primary seat of infection. If this keeps on the tonsils will be held responsible for every ill of the body. No doubt many of our systemic diseases originate in the tonsils, but I think it is too far-fetched to say that the tonsils are the seat of typhoid fever infection. It is stated that the mortality has been reduced to 4 per cent. from 18 per cent. by the use of antitoxin. I have in mind an epidemic in a city, with 400 cases, in which the total mortality was 6 per cent. If these men had 18 per cent., it simply shows that there was misunderstanding or lack of care somewhere. There is no excuse for showing a mortality of 18 per cent., or anything above 10 per cent.

Dr. C. S. Bond, Richmond: It is a mistake to make a positive diagnosis the first time one sees a patient. Since the Widal reaction comes relatively late in the course of the disease, it makes it all the more necessary to be careful in the diagnosis. Some time ago I saw a patient in consultation. A little girl came home from a school where there had been a great deal of typhoid, and the physician took it for granted that she had typhoid fever. She had a temperature of 102 F., and she said she had some rose-colored spots on the abdomen. The patient kept going down for two or three weeks, and finally the physician found a little lump in one side of the abdomen. I had the case about six weeks afterward and found a tuberculous mass in that side of the abdomen; and the girl died of tuberculous peritonitis. This physician had made a diagnosis of typhoid fever before he had an opportunity to determine whether the girl had typhoid or not.

Dr. Albert Sterne, Indianapolis: I want to call attention to those cases which are not atypical, but which at the same time do not permit of accurate diagnosis except with the assistance of complete blood examination, cultures, Widal test, etc. That is the kind of typhoid I see, and not infrequently, either. These cases begin with the symptoms of an ordinary depressant insanity—confusion, sometimes marked delirium, with evidences of brain agitation. There is very little fever—in fact, almost no fever in the beginning; slight rise of temperature in the evening, but hardly more than in the normal state. The mental confusion is not delirium or ordinary mania, it is an ideation which, while more rapid than normal, savors of the fixed rather than the rapid ideation which appears when there is inability to express an idea by word of mouth. In these cases I frequently test, not the blood, but the spinal fluid. It is in such cases that laboratory methods of diagnosis are necessary. Diagnosis is practically out of the question without them.

Dr. John C. Fretz, Deedsville: The statement was made that it was inexcusable for a physician to lose more than 10 per cent. of typhoid cases. I do not know any man who has lost 10 per cent.; but who has the right to say what percentage a man may lose? I do not want an expression made in this society to go out over the state and to the laity that a man has no right to lose more than 10 per cent. of his typhoid patients.

Dr. A. P. Buchman, Fort Wayne: In diphtheria we have an absolute specific, and that specific is so harmless that its use cannot do the patient any harm. In typhoid fever we have nothing of this sort. It is the individual patient whom we have to look after, and the man who has a reasonable amount of experience and knows how to get the history of his case, in seventy-five out of eighty cases can make a diagnosis of typhoid fever that is reliable within from 2 to 5 days of the inception of the disease—if he watches the patient closely and watches the symptoms. The five cases that are left are the cases for which we need the laboratory; but the idea that by means of the laboratory one can make a diagnosis, without symptoms and without a history of the cases is absolutely fallacious. The tendency is to laboratory mania. The Widal test does not always occur within the same time. In some of the carefully watched cases the test did not show the disease. There was something wrong somewhere. I feel confident that in time these tests will become more reliable, but the practice is in its infancy, and the man who talks about absolute certainty is wrong.

Dr. W. Shimer: This subject of typhoid seems old, and yet I think one of the biggest problems we have in America is that of control and eradication of typhoid fever. Robert Koch at his death was trying to solve this problem for Germany. Any culture medium in which typhoid bacilli will grow is good to use. The main thing is that it must be absolutely sterile. One can use ox-gall, broth, anything. The Epstein medium is of special value because it can be carried in a small tube in the pocket. If it is not taken to the laboratory for 12 to 24 hours, the bacilli will grow in the solution.

The difficulties of taking the blood have been magnified considerably. I have done it often within 5 minutes. Dr. Simonds and I at the State Bacteriologic Laboratory have often drawn from our own veins from 10 to 15 c.c. of blood, and never put any bandage on. It is the easiest thing in the world, especially in people who are somewhat spare. Put the needle into one of the large veins of the elbow, and when you get through just pull out your needle. It is as easy as a hypodermic injection. Accuracy is absolutely necessary, and lack of it means contamination. Often surgeons, who know so much about asepsis, will bring in fluid full of bacteria, and yet they think they have been extraordinarily observant of asepsis.

Many instances have been reported of discrepancies between positive and negative findings in blood cultures. A large number of cases are necessary for conclusions to be of value. Coleman and Buxton had pretty nearly 2,000 cases. The German army statistics, which show from 12 to 18 per cent. mortality, were the average of a large number of cases. One cannot draw conclusions from the experiences of a man in general practice or in a small hospital. There seems to be some misconception of the difference between serum and vaccine. A therapeutic serum is a serum from an animal that has been inoculated with a specific bacterium, and a vaccine is made from the dead bacteria; both are injected to produce immunity to the specific organism in question. They are, however, entirely different preparations.

Plea for Cesarean Section, Based on a Report of Fifty-Three Operations Performed in Indiana

Dr. G. W. H. Kemper, Muncie: Formerly this operation was regarded as the *dernier ressort* of midwifery. In other words, after the unfortunate woman had been subjected to efforts at delivery with forceps and version, and reduced to exhaustion, and the fetus subjected to injuries, the abdomen was incised, and if death resulted to mother or child, or both, it was attributed to the Cesarean section. It was like the early beginning of antitoxin, which might be tried for diphtheria after all other remedies failed, and then incurred the blame for a death it did not cause, and declared to be inert or harmful when it had not been given a fair test. I have collected from various operators, fifty-three cases of Cesarean sections done in Indiana. The first case of which I can find a record was performed near Madison, Jan. 29, 1863, and the last, August 20, 1910. The following is an analysis of the fifty-three cases:

	Cases.
Mother and child saved	27
Mother alone saved	11
Total number of mothers saved	38
Mother and child lost	7
Mother alone lost	8
Total number of mothers lost	15
Child saved with mother	27
Child alone saved	8
Total number of children saved	35
Child lost with mother	7
Child alone lost	11
Total number of children lost	18
Total number of mothers and children saved	73
Total number of mothers and children lost	33

I would not inculcate the idea that the physician is to open the abdomen rashly. The responsibility should be divided with one or more competent advisers. In the language of Oliver Wendell Holmes:

"The woman about to become a mother should be the object of trembling care and sympathy, wherever she bears her burden or stretches her aching limbs. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly."

Conservatism of Elective Cesarean Section

Dr. O. G. Pfaff, Indianapolis: In obstetrics conservatism has ever been the dominating spirit. Parturition has been for ages venerated as one of Nature's processes, complete and perfect in itself, and until recently was surrounded by a sort of mystical halo which repelled all tendencies toward interference with the operations of its sacred laws. I wish here to refer to three cases very briefly. All patients were operated on at St. Vincent's Hospital. In one case, a woman with interstitial pregnancy was operated on at six months; the mother made a prompt recovery. In the second, at full term after more than twenty-four hours of violent labor with many attempts at forceps extraction, both mother and child were saved without any complication in recovery. The third patient was in labor all day and far into the night. The pelvis was deformed—less than three inches in the transverse diameter. The patient was taken to St. Vincent's Hospital. The membranes were intact and she had not been violently handled. The operation was done quickly and for several days everything looked well. On the fifth day there was rise in temperature and pulse-rate. The wound appeared to be in perfect condition. The symptoms increased and the next day the wound was again examined and found to have opened; the omentum presented at the upper angle. The catgut had evidently been absorbed early and the peritoneum and deep structures had retracted, allowing the omentum to become a wedge, which gradually forced its way to the surface. I resutured with catgut and reinforced the entire wound with silk-worm gut. However, the cavity had already suffered infection and the woman died. The death is probably chargeable to a surgical accident such as might occur in the simplest abdominal section, and bears no relation at all to the specific cause for which the woman was operated on. The child is alive and well. My conclusions are these: Elective Cesarean section is one of the safest of major operations, being favorably comparable with the interval operation in appendicitis. that is, it shows a mortality conservatively estimated at 3 per cent. or less when performed by capable surgeons in well-equipped hospitals. This low mortality by no means excuses unnecessary operations, but it certainly justifies us in undertaking this procedure for various indications not heretofore considered valid. When experienced judgment decides that a debilitated, poorly equipped woman is to encounter any serious danger in natural delivery, Cesarean section is the safest course. It is the best course in grave albuminuria before the onset of labor, or in placenta prævia immediately on recognition of the condition. Whenever through a deformed or narrow pelvis, or one obstructed by any growth, or because of an unusually large child natural delivery is impossible, section is the only humane procedure. Cesarean section is purely and exclusively a hospital operation and is to be placed on a firm basis through a careful study of the work of those experts who in our large maternity hospitals are devoting their lives to the development of this most beneficent and truly conservative procedure.

DISCUSSION

Dr. Walter Schell, Terre Haute: I agree with Dr. Kemper that Cesarean section should not be a matter of last resort. It is as difficult to make a proper high-forceps application as to do any operation within the realm of surgery, and the reward should be proportionate. Any man who has ever performed Cesarean section—any man who is capable of performing this operation properly—is competent to do anything that any other surgeon can do, therefore he should have a proportionate recognition of his knowledge and skill If a man is a properly trained obstetrician he should know in advance that in a given case he will probably have trouble, and he should know within relatively narrow limits the kind of trouble he is going to have Every woman who engages a physician for confinement has a right to expect of him the very best service and knowledge It should never be necessary for a physician to go to an obstetrical case without having seen the patient before In the past, physicians hesitated somewhat to perform this operation quickly and promptly, and this delay in the extraction of the child, and delay in placing themselves in position to control hemorrhage was one of the reasons for the immense mortality This operation received a new impulse and new life and took on new surgical aspect after Sawyer demonstrated the absolute necessity of gradually closing the wound in the uterus

The question whether Cesarean section is safer than the forceps or traction operation depends on the character of the forceps operation In a high forceps operation in which the pelvis diameters are less than 10 cm, and the child above average size, then wounds may be inflicted on the woman that may result, if not in death, at least in making her a cripple for the rest of her life I feel that the high forceps operation is an exceedingly difficult one

Dr M F Porter, Fort Wayne It has been years since I have consented, nor will I ever again consent, to doing a craniotomy on a living child, unless it is a monster or some thing of that sort I do not think that I have any right to do it I know that I can deliver a woman by Cesarean section and give her a better chance for life than I can by high forceps application I think that this line of surgery has been very much neglected More than half of the mothers are delivered without the presence of a physician, and yet when a woman comes out of labor she comes out under conditions that make it necessary for her to undergo inherent risks far greater than she would undergo in any ordinary surgical operation

In a large percentage of high forceps deliveries the child is seriously injured, 50 per cent of these children so injured are injured permanently, 30 per cent subsequently become epileptics, 20 per cent of the children in the Indiana School for the Feeble Minded are there because of a high forceps operation In the light of these facts we must stop in large measure these brutal so called operations, for they are brutal The maternal morbidity after this operation is as great as after Cesarean section done by an intelligent hand and under proper circumstances So far as the morbidity of the child is concerned in such cases, no man can deliver a woman and give the child as good a chance by ordinary delivery as by Cesarean section The risk to the child is infinitely less than by ordinary normal labor

Dr Joseph N Study, Cambridge City: I think it is time that physicians throughout the country knew more about this important subject What is to be done for the women so situated that they cannot have the advantage of a hospital, and who are seen at a time in their confinement when they can not be taken to a hospital? It is true that the high forceps operation injures the child, and in many cases causes feeble mindedness, but a physician is frequently called to a case in which labor is well advanced, something must be done immediately In such circumstances, if the child cannot be born through the natural passage without reducing its head, it seems to me proper and just that craniotomy be done, if the child cannot be delivered by forceps or otherwise

Dr F A McGrew, La Porte I want to place on record an unusually interesting and unique case of Cesarean section by accident The patient was a young woman, healthy and vigorous, a farmer's wife Within two weeks of confinement, while she was sitting in the kitchen, her brother, sitting about ten feet away had a shotgun across his knees and was cleaning the barrel The gun was discharged and the full force of the shot entered the woman's abdomen The whole front of the abdominal wall and the front and upper part of the fundus of the uterus were torn away The placenta was also torn loose, and the child was half expelled into the outer world; the buttocks and back of the child protruded from the abdomen The woman walked into another room to her bed, where she lay down and was covered up with the ordinary bed clothing About an hour later an operation was undertaken on an ordinary kitchen table, and the house was none too clean The woman's condition was much better than might have been expected She was pale and somewhat anemic, but the pulse was fairly good and she was a woman of great nervous force She stood the operation well The child was extracted—dead, of course—the uterus was removed and the stump fastened against the lower end of the abdomen roof against the peritoneum, so that drainage could be instituted Three or four days later the patient was removed to a hospital, in order to have the benefit of a trained nurse and better attention She recovered without incident However, about six months later I was compelled to operate for intestinal disturbance, and on opening the abdomen I discovered that the cervix and peritoneum, where they had been fastened together had drawn out into a band which was the cause of the intestinal disturbance The band was severed the intestine was in good shape The woman once more recovered without complication, and she is now in good health, and doing her own work

Dr E Schmauss, Alexandria. In the last case reported I see no use in bringing the cervix stump up to the peritoneum It could have been drained through the vagina In the case at St Vincent's Hospital, the defect in suturing was undoubtedly due to hasty work So long as the mother is in good condition and the child is alive, there is no need of haste, and if this patient had been carefully sewed up and adhesive strips had been put on, this accident would have been avoided One of the hardest things to decide in these cases is when to perform the Cesarean section in preference to the high forceps operation It is not so much the question of the living child as of the laceration of the mother

Dr Paul Martin In expert hands the maternal mortality rate for Cesarean section is less than 2 per cent, the fetal mortality is *nil*, and if we undertake always to do an elective Cesarean section rather than that of emergency, I am sure this rate can be very much reduced In general in contracted pelvis the fetal mortality rate is 20 per cent, from forceps it is from 35 to 60 per cent, by inducing labor, the rate is 30 per cent There are certain other cases, simply a slight narrowing of the pelvis, or a rigid, hard cervix and unyielding soft parts, which may be directly responsible for incompetency for normal labor This should be recognized, and early conservative methods adopted Cesarean section affords less risk to the child than the other methods or delivery, and perhaps equal chance to the mother of a healthy life I believe that to day the morbidity of the mother and the fetal mortality in the results which we get, are due to the inefficient application of the forceps, and the dangers of the applications of forceps I do not think can be over estimated

Differential Diagnosis of Labyrinthine Suppuration and Cerebellar Abscess

Dr John J Kyle, Indianapolis The observations herein advanced are the result of the study of Neumann's work on cerebellar abscess, and my own personal observation of the work of Barany at the General Hospital in Vienna on nystagmus and its value as a diagnostic factor in labyrinthine and cerebellar diseases The conclusions of Neumann are as follows

> It therefore follows if it is allowable to draw any conclusions from the certainly small number of cases that in the acute cases labyrinthine suppuration plays no rôle in the origination of cerebellar abscess but that the latter is set up either through the instrumentality of a sinus phlebitis or an extradural abscess of the posterior fossa An entirely different picture is presented by the chronic cases in the majority of which the cerebellar abscess is of labyrinthine origin and the path of conduction is more often the aqueductus vestibuli

To recapitulate the symptoms of circumscribed suppuration of the labyrinth, we have acute or chronic suppuration of the middle ear, deafness, pain in the ear, variations in tem perature, giddiness, disturbances in locomotion, sometimes facial paralysis, with marked probability of meningitis or abscess of the brain, or sinus thrombosis. In cerebellar abscess from internal ear suppuration—and they are usually associated—we have pain in the occiput or forehead, hemiparesis on the affected side, spontaneous nystagmus sometimes to the affected side, tendency of the patient to lie on the diseased side, disturbance of speech of a bulbar character, stiffness of the neck muscles on the affected side; the patient will support the head whenever any movement is necessary; nausea and vomiting are present and, in extreme cases, convulsions, muscular depression of the abdomen, Cheyne-Stokes respiration, and delirium. The nystagmus, either spontaneous or induced, will be to the side of the lesion. Differential diagnosis of course must be made between temporal lobe abscess, meningitis and sinus thrombosis. This may require surgical exploration, which should be advocated. In the 196 cases reported by Neumann, 25.98 per cent. of the patients were cured.

DISCUSSION

Dr. G. W. Spohn, Elkhart: I hold that there would be no abscess without a discharging ear—a chronic discharging ear. It is rare to have abscess of the brain from acute suppuration of the ear. Whenever the labyrinth is affected in any way, there is nearly always nausea and dizziness. When there is fistula from a bony condition and not from a membranous condition, we do not have suppurating labyrinthitis, but serous labyrinthitis. When there is dizziness and nausea, infection of the labyrinth is present. These symptoms will last for from 2 to 6 days, but generally only from 3 to 4 days, and of course no one can operate while the acute condition exists. Very seldom does brain abscess follow labyrinthitis. Abscess of the cerebellum goes almost directly to the sinus of the posterior fossa. To differentiate between the two: When we get stiffness of the neck, a discharging ear, no dizziness, no nausea, that will eliminate the labyrinth. If there are stiff neck and soreness right over the cerebellum, it is abscess of the cerebellum. A stiff neck points almost directly to the cerebellum or the posterior fossa. Few of these cases of acute middle-ear suppuration end in abscess of the brain.

The Hygiene of Menstruation

Dr. Jane W. Ketcham, Indianapolis: Healthy women should be able to follow their usual occupation during their menstrual periods. It is amazing how many women live in poor surroundings; they have just enough vitality to get along. If the general conditions in which these women live be improved and their well-being brought a little above par, so that they have enough vitality to spare for any unusual drain their menstrual difficulties will disappear. Good ventilation, warm clothing, regular habits—including sufficient sleep—and food of the plain and wholesome kind are of great importance. The patient must have outdoor exercise every day, regardless of the weather.

The less medication the better. The time to give medicine is between the menses, and then the medication should be tonic and alterative. Alcoholic beverages should not be given for the relief of pain in this condition. There are other drugs which are infinitely more desirable. The Russell Sage Foundation, which has for its aim the study of sociologic conditions, has reported that in New York City one woman in every four is a wage-earner. This is a larger proportion than is commonly supposed, and moreover, it is a condition which is not confined to New York City. This includes of necessity women of various classes, conditions and ages. Are they undermining their own health, or are they building it up? Are they endangering the health of the next generation, or will they transmit a tougher fiber? The economic importance of this question is on the increase from day to day, since the number of women who work is everywhere increasing.

DISCUSSION

Dr. J. M. Dinnen, Fort Wayne: I have been impressed with a serious error that has been made in this variety of cases, and that is the constant meddling with these conditions. I do not believe that any girl arriving at the age of puberty should be submitted to an examination without mature deliberation. I think all the conditions surrounding the patient should be taken into consideration, her habits of life, her mode of living, her surroundings, for I believe that enters more largely into the conditions at that time than anything else. The school girl is engaged at times with social duties, and few of them will cut out the social duty on account of the menstrual condition. I believe that the physical condition of the patient should be taken into consideration—whether or not she is anemic; and whether her surroundings are such as one could wish. The patient should be put into the hands of a person who is thoroughly competent and who will use the best judgment and not accede to the wishes of mother or child. A perfectly healthy child might menstruate at 12, another at 16, but if menstruation is delayed until 16 there are conditions there that should be looked into, conditions that may be a forerunner of something else.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

November 12

1 *Relation of the Acid-Fast Tubercle Bacillus to Other Forms of Bacterial Life. S. J. Maher, New Haven, Conn.
2 Diagnostic and Therapeutic Value of Lumbar Puncture. L. Louria, Brooklyn, N. Y.
3 Insufficiency of the Pylorus. M. I. Knapp, New York.
4 *Peculiar Results of Eye-Strain. W. M. Richards, New York.
5 Technic of Examination of the Duodenal Contents. M. Gross, F. v. Oefele and M. Rosenberg, New York.
6 Death Under Gas and Oxygen Anesthesia. G. F. Lydston, Chicago.

1. **Acid-Fast Tubercle Bacillus.**—Maher maintains that the acid-fast tubercle bacillus is simply a most highly specialized acid-fast bacillus that has acquired the faculty of resisting the lytic power of the animal cell. And that like all other acid-fast bacilli, it was derived originally from a non-acid-fast bacillus. The hope of the infected animal lies in depriving him of his acid-fast armor and weapons. The great sensitiveness of the tubercle bacillus to change of environment *in vitro*, affords a key to the solution of Nature's cures of tuberculous animals. When the infected animal is cured by change and fresh air, is it not, Maher asks, because in the new environment the tubercle bacillus has difficulty in perfecting its acid-fast development and therefore grows non-acid-fast or poorly acid-fast, or breaks up into cocci, which may or may not win the next battle with the cells? If the cells win, the patient recovers. If the cells lose, the coccal and rod forms quickly break-down surrounding tissue entrenchments. The so-called secondary invaders are practically always, he says, derivatives of the struggling acid-fast tubercle bacillus. The acid-fast tubercle bacilli develop into culturable cocci and non-acid-fast bacilli.

4. **Eye-Strain.**—Richards mentions disorders of sleep, posterior nasal catarrh, digestive disturbances, and claims to have given relief in asthma and hoarseness by fitting glasses.

New York Medical Journal

November 12

7 Sources of Infection in Venereal Diseases in New York. F. Bierhoff, New York.
8 Gross Drugs *vs.* Active Principles. G. F. Butler, Chicago.
9 Serodiagnosis of Syphilis, Using the Noguchi System. W. A. Groat, Syracuse, N. Y.
10 The Ehrlich-Hata "606" in Syphilis. J. A. Fordyce, New York.
11 The Roentgen-Ray and the Special Senses. E. H. Skinner, Kansas City, Mo.
12 * [illegible] inoma of the Breast. R. H.
13 [illegible] H. Randle, Ger[illegible]
14 [illegible] Lateral agree with Dr.
[illegible] ot be a matter of
15 Technic and General Use for Ehrlich's
Wolbarst, New York. a proper high-forceps
16 Accidental Detachment of the Nor thin the realm of surgery,
W. S. Picotte, Ishpeming, Mich
sionate. Any man who has
12. Abstracted in The Journa —any man who is capable of

Boston Medical and Surgical Journal

November 10

17 Spinal Anesthesia. F. Allen, Boston.
18 *Etiology of Elephantiasis. G. C. Shattuck, Boston.
19 Congenital Ophthalmoplegia Externa. S. G. Webber, Boston.
20 *Technic of Arthrotomy. C. F. Painter and A. P. Cornwall, Boston.
21 *Cutaneous Diphtheria. E. H. Place, Boston.
22 Conical Stump After Amputation in Childhood. C. A. Powers, Denver, Colo.

18. **Etiology of Elephantiasis.**—Shattuck undertook by a review of the literature to ascertain the present state of knowledge of this disease. He now believes that the essential characteristics of typical acquired elephantiasis are lymphangiectasis, hyperplasia of connective tissue, and chronic edema. The relation of these to each other in the production of elephantiasis is not clear. It appears that these changes may frequently be attributed to the interaction of stasis and of inflammation. Stasis always occurs early and persists. Inflammation may precede or follow stasis, or may not be manifest at any stage of the disease. Inflammation when present may be acute or chronic; and is generally traceable to bacterial infection. Either chronic stasis or inflammation from any cause may predispose to elephantiasis, but even when they occur together, elephantiasis does not always result. There is reason to suppose that congenital weakness or anomalies of lymphatics may play an essential part in the production of some cases of elephantiasis; and that such weakness or anomalies can be inherited. The filaria is an important factor in the production of endemic elephantiasis of some regions, but it is not essential to the occurrence of endemic elephantiasis. Elephantiasis in filarial regions results indirectly from filariasis through bacterial infecton. Sporadic lymphatic elephantiasis and endemic elephantiasis are not essentially different.

20. **Technic in Arthrotomy.**—In this series of 198 cases there were thirteen erasions—nine in men, four in women. There was one slight skin infection among these. One case was so bad when the joint was opened that an excision was attempted, but the disease extended so far into the tibia that a thigh amputation had to be done. One case was a wrist. The others were all tuberculous knee-joints. There was one death among this group, and that was a few days after leaving the hospital and was due to tuberculous meningitis. It was observed in studying the cases in this group, viz., the excisions and erasions, that the danger of disseminating a tuberculous infection through surgical procedure is not a wholly negligible matter. The authors show that care must be exercised to allow Nature to start her protective immunizing processes, both local and general, before one takes the risk of opening up new tissue to infection and absorption.

21. **Cutaneous Diphtheria.**—In the case reported by Place, that of an infant aged 7 months, two days before admission swelling and redness became marked over the area of the abdomen, genitals and thighs covered by the diaper. There was a considerable thin discharge. Over the lower third of the abdomen, the vulva, perineum, anterior part of buttocks and the upper quarter of the internal surface of the thighs, the skin was markedly reddened, swollen and covered with a grayish hyaline membrane, firmly adherent, and when forcibly removed left a granular area which bled easily. Scattered through this area, especially the lower part, were small various shaped islands of healthy skin, some connected by narrow bands of healthy skin. There were no vesicles or pustules, and the skin elsewhere was normal. Cultures from the skin showed typical diphtheria bacilli. Cultures from the nose and throat and from the nose and throat of the mother showed no diphtheria bacilli. The necropsy showed, besides the skin lesions, some hyperplasia of the lymphoid tissue, "septic" spleen, beginning bronchopneumonia of both bases and some pus in the middle ear. The source of the infection not discovered.

Albany Medical Annals

November

Light and Electrotherapy T. D. Crothers, Hart-
House. A. MacFarlane, Albany.
THE JOURNAL, Oct. 1, 1910, p. 1223.

New Orleans Medical and Surgical Journal

November

25 Local Anesthesia with Quinin and Urea Hydrochlorid. C. W. Allen, New Orleans.
26 Bumm's Round Ligament Fixation. W. Kohlmann, New Orleans.
27 Treatment of Tabes Dorsalis. T. A. Williams, Washington, D. C.
28 Spinal Anesthesia. S. P. Delaup, New Orleans.
29 *Autoserotherapy in Treatment of Fluids in Serous Cavities. I. I. Lemann, New Orleans.
30 Aerophagy. F. E. Lamothe, New Orleans.
31 Displacement of the Heart. A. E. Fossier, New Orleans.
32 Successful Use of Chromium Sulphate in a Case of Ataxic Paraplegia. B. O. LeBlanc, St. Gabriel, La.

29. **Autoserotherapy.**—Lemann reports three cases in which this method of treatment proved successful. The first case was also one of pleurisy with effusion. The second was a case of chronic parenchymatous nephritis, where the patient not only had an accumulation fluid in the left pleura, but was also generally anasarcous. The third case was one of ascites.

Western Medical Review, Omaha, Neb.

November

33 The Owen Bill and Its Opponents. S. A. Knopf, New York.
34 Pathology and Treatment of Acute Puerperal Sepsis. J. R. McKirahan, North Platte, Neb.
35 Progress of Medicine in Nebraska. W. C. Bartlett, Alma, Neb.
36 Ochsner Treatment of Appendicitis Applied to Treatment of Nausea and Vomiting of Pregnancy. A. B. Somers, Omaha, Neb.
37 *Operation for Prolapsus Uteri. C. A. Roeder, Grand Island, Neb.
38 Significance of Cough in Disease. J. B. Hardy, Stanton, Neb.

37. **Prolapse of the Uterus.**—The essential factor in the production of prolapse of the uterus, says Roeder, is the recession of the cervix from the hollow of the sacrum. In the posterior positions of the uterus in nullipara we often find the posterior vaginal wall shorter than normal, and it is just here where the primary cause of the trouble lies. Simple shortening of ligaments or suspensions is not so successful, because the cervix is held more firmly out of place by the patient's abnormally shortened posterior vaginal wall. In these cases Roeder first lengthens the posterior vaginal wall, through the vagina, by a transverse incision, freely loosening it from the rectum, and sewing the transverse incision up longitudinally, then proceeding with the abdominal operation. In case the incision through the vagina seems too difficult, he opens the abdomen at once, incises the peritoneum covering the cul-de-sac of Douglas, brushes back with gauze the posterior vaginal wall from the rectum, and sews the uterosacral ligaments to the loosened vaginal wall, covering all denuded areas with peritoneum. Then, after the method of Coffey, he folds the inferior half of the broad ligaments over the posterior portion of the uterus, the superior half over the anterior, which helps to antevert the uterus. The round ligaments are shortened and strengthened at the weakest points after the method of Mayo, folding them over at the attachments of the internal ring.

Illinois Medical Journal, Springfield

November

39 *Dislocation of the Atlas. C. E. Black, Jacksonville.
40 *Medical Treatment of Pelvic Diseases of Women from the Standpoint of the Surgeon. J. F. Percy, Galesburg.
41 Extrauterine Pregnancy. E. C. Franing, Galesburg.
42 *Prophylaxis of Postoperative Cystitis. E. C. Dudley, Chicago.
43 Radium in the Treatment of Cancer, Angioma and Keloid. L. Wickham, Paris, France.
44 *Two Thousand Blood Examinations for Hemamœba Malariæ. T. M. Aderhold, Zeigler.
45 Tabes Dorsalis and the Surgeon. G. W. Hall, Chicago.
46 Campaign Against Summer Diarrhea in Chicago in 1909. C. Hedger, Chicago.
47 Modern Operative Treatment of Varicocele of the Spermatic Cord. A. P. Heineck, Chicago.
48 Cancer of the Uterus. G. C. Kasdorf, Robinson.

39. **Dislocation of Atlas.**—While riding, the patient's horse stumbled and fell, throwing him over its head in such a way that he struck with the principal weight on his forehead. He felt something "snap" in his neck and had to support his head with his hands if he made a sudden movement, and for this reason he could not get back on his horse, but was able to walk home several miles, although he had con-

siderable pain in the occipital region. He could not turn his head from side to side and could not open his mouth more than half an inch. He found that swallowing was interfered with by something which pushed forward the front part of his neck. For three weeks he went about visiting among the neighbors, waiting for conditions to improve so that he could return to work. He could walk with tolerable comfort. When there was any unusual action or strain or when he wished to get up from bed or from a reclining posture, he had to support his head with his hands, but when erect he could walk long distances without distress. He reported that he frequently walked as far as 10 miles a day, but could not ride horseback or in a wagon or buggy. The pain in the occipital region continued, he tired more easily than before the injury and the stiffness and swelling did not disappear. After waiting three weeks a diagnosis of dislocation or fracture of a cervical vertebra was made. There was absence of motor, sensory or reflex symptoms. He complained of pain on moving the head and at times complained of frontal headache. A curious symptom was that pressing his feet against the foot-board of his bed seemed to relieve the headache temporarily. He complained of pain in the muscles of the neck, all of which were held rigid and tense and sometimes there was twitching of the muscles of the right side of the face. At times he had a pain which began at the level of the thyroid crest which pressed forward and extended around to the left ear. The face was held slightly to the left and could be rotated a little to that side, but not at all to the right, while the head was slightly tilted to the right. This tilting of the head was greater than it appeared as the bending of the lower vertebræ compensated the deformity at the junction of the atlas and axis. He entered the hospital in the evening and was put to bed. Appetite was good; bowels were constipated; pulse was 88; respiration was 16; temperature was 98.6. The first night he slept quietly and comfortably from 8:30 p. m. to 6 a. m. After making a careful examination, a diagnosis of dislocation of the atlas with probable fracture was ventured. The skiagraph fully confirmed this diagnosis. This was taken with the patient lying on his left side and showed the forward dislocation of the atlas and gives a reasonable presumption of fracture of the odontoid. It would hardly be possible to get such a picture with the odontoid intact. A plaster splint was made to fit the back, shoulders, neck and back of head, which was held in place by bandages. This kept him rigidly in one position and made him more comfortable. After three weeks an attempt was made to reduce the dislocation, first by manipulation, extension, flexion, rotation, without success, and then by the open method. A median incision was made extending well up on the occiput and down to the spinous process of the sixth cervical vertebra. This gave a free exposure of the region of the atlas and axis. The spinous process of the axis had been fractured near the tip and the lamina on the right side of the axis had been fractured. Both of these fractures were firmly united in the seven weeks which had intervened. The right lateral process of the atlas was rotated forward into the intervertebral notch. The posterior arch of the atlas was thrown upward almost against the edge of the foramen magnum and forward across the opening. After securing free exposure of all parts, an attempt was made to effect a reduction, but without avail. A new plaster cast was applied to the head, neck, shoulders, and back and the patient returned to bed in good condition. He was kept in the cast for six weeks, at which time he was able to walk about comfortably, but he did not leave the hospital until December 12. He seemed perfectly strong and well, except for a stiff and deformed neck. About five weeks later he returned with symptoms indicating that degeneration of the cord was in progress. The patient died from respiratory failure.

40, 44. Abstracted in The Journal, May 28, 1910, p. 1808.

42. Abstracted in The Journal, June 4, 1910, p. 1892.

Ohio State Medical Journal, Columbus

November

49 Symptoms Which Would Lead to Early Diagnosis of Cancer of the Rectum. L. J. Hirschman, Detroit.
50 *Intravesical Operations. C. M. Harpster, Toledo.
51 *Two Interesting Liver Cases. E. W. Mitchell, Cincinnati.
52 *Prognosis in the Traumatic Neuroses. L. Miller, Toledo.
53 *Extensive Syphilitic Ulceration of Tertiary Nature. A. Ravogli, Cincinnati.
54 Nutrition of Twins and Triplets. R. L. Jett, Cleveland.
55 Muscular Deviations and Suggestions of a New Nomenclature. J. E. Cogan, Cleveland.
56 Chorioidal Atrophy in Myopia. W. S. Keller, Cincinnati.

50. Abstracted in The Journal, July 16, 1910, p. 1246.

51. **Two Interesting Liver Cases.**—Both cases reported by Mitchell were in young subjects. Both began insidiously with all evidences of a simple catarrhal jaundice and were so looked on until considerable and rapidly increasing enlargement of the liver showed that they were of more serious nature. In both jaundice was very marked. In both the liver shrank rapidly in size as the symptoms of grave icterus developed. In one patient this condition developed abruptly and terminated in death in the surprisingly short time of thirty-six hours. In the other patient the development was somewhat less abrupt and the duration several days. In both the terminal clinical pictures most clearly resembled acute yellow atrophy. The pathologist showed that both these cases were instances of cirrhosis of the liver.

52. Abstracted in The Journal, June 4, 1910, p. 1895.

53. **Syphilitic Ulceration.**—In Ravogli's case, the ulcer on a thick and infiltrated base consisting of red elevated nodules, began in the upper part of the right inguinal region, involving the whole fossa cruro genitalis and the labium of the same side. In an irregular serpiginous way it descended down to the thigh involving a large area of the gluteal region and the perineum, descending toward the anus. One ulcer was also found on the other side of the gluteal region just on the surface of the skin touching the ulcerated spot of the opposite side showing a local inoculation. An extensive scar on the posterior region of the thigh bears witness of more extensive ulceration already healed up. The ulcer consisted of an aggregation of small nodules causing an infiltration of the whole surface. Some of the nodules were broken down, some covered with thick crusts, some vegetating forming thick papillæ. The right labium was thickly infiltrated, enlarged, elephantiasic, and through the ulcerated surface, adherent to the thigh and drawn downward. The diagnosis was that of syphilis ulcerosa præcox. Wassermann test with Noguchi method gave a positive reaction. The Moro test for tuberculosis was negative. The woman was treated generally with gray oil injections twice a week, and internally potassium iodid and an iron tonic. In a short time she improved considerably in her nutrition and in her general health. The ulcer was treated locally by bathing with 1 to 2,000 bichlorid solution, and covered with calomel in Wilson ointment, 20 grains to the ounce. The ulcer was slowly improving, yet not fast enough to give satisfaction. The patient was subjected to general anesthesia with ethylchlorid followed by ether. The ulcer was thoroughly curetted, the labium was detached and corrected; during the operation it bled profusely. The hemorrhage was checked, the wound was covered with iodoform dressing. The same manner of dressing was continued, the wound was clean, and in a relatively short time, healed up completely leaving a soft regular scar.

Yale Medical Journal, New Haven

October

57 A Medical Retrospect. W. T. Councilman, Cambridge, Mass.
58 *Therapeutic Use of Tuberculin. D. R. Lyman, Wallingford, Conn.

58. **Therapeutic Use of Tuberculin.**—Statistics for sixty-seven cases treated with tuberculin at the Gaylord Farm Sanatorium, and 374 without, in the five years prior to Jan. 1, 1910, show that of the incipients, 82 per cent. of those treated and 83 per cent. of the untreated are now at work with the disease arrested. Of the moderately advanced, the figures are 40 per cent. for the treated, and 48 per cent. for the untreated; of the far advanced, 10 per cent. and 11 per cent. respectively. These figures show no appreciable difference between the treated and untreated cases; the slight additional percentage being, in fact, in favor of the untreated. If, however, says Lyman, one reviews these same cases from

the standpoint of any possible increase in resistance, as shown from the death-rate, it is found that of the incipients treated with tuberculin none has died, while there are 4 per cent. of deaths among the patients untreated; the moderately advanced show 27 per cent. as against 19 per cent., indicating, perhaps, some increase in resistance from its use, especially in the more advanced cases. Lyman's impressions on the whole are more hopeful as to its future in tuberculosis therapy than these statistics would imply. It is not in itself a cure, but in suitable cases, and given with utmost care, it is undoubtedly a great aid in some instances. In many cases after the ordinary sanatorium régime has brought the patient's general condition up to normal, but when constant relapses are occurring and the patient is apparently losing ground, its use has been followed by marked and often apparently permanent improvement. The patients experience a distinct increase in general strength, they can do more without tiring, and sometimes there is distinct increase of appetite, decrease of slight persisting temperature, and relief of pain from chronic dry pleurisy.

Annals of Surgery, Philadelphia

November

59 Atony of the Bladder Without Obstruction or Signs of Organic Nervous Diseases. J. W. T. Walker, London.
60 Congenital Strictures of the Ureter. J. T. Bottomley, Boston.
61 Primary (Congenital) Hydronephrosis. C. G. Cumston, Boston.
62 *Recent Developments in Pyelography. W. F. Braasch, Rochester, Minn.
63 *Removal of Carcinoma of the Fundus of the Bladder. F. R. Hagner, Washington, D. C.
64 *Intraperitoneal Cystotomy. C. E. Tennant, Denver, Colo.
65 Treatment of Cystitis by Distentions of the Bladder. H. A. Kelly, Baltimore.
66 *Is the Sac of a Femoral Hernia of Congenital Origin, or Is It Acquired? R. W. Murray, Liverpool, England.
67 *Silver Wire and Linen Thread for the Cure of Hernia. J. Wiener, New York.
68 *A Pneumatic Tourniquet. F. E. Bunts, Cleveland.
69 Control of Hemorrhage by Forceps-Tourniquet in Major Amputations. J. L. Thomas, Cardiff, England.
70 Figures About Fractures and Refractures of the Patella. E. M. Corner, London.

62. An abstract of this paper appears in Society Proceedings, this issue.

63. **Carcinoma of Fundus of Bladder.**—Hagner claims that it is possible, with exercise of proper care, to remove tumors from the fundus and lateral walls of the bladder without the slightest traumatism to the tumor mass by his method. The operation is impracticable for tumors of the bladder base. The following is a description of the operation as employed in one case: The bladder was irrigated, and on account of bleeding, adrenalin 1:10,000 was instilled and allowed to remain five minutes. The bladder was then distended with 350 c.c. of salt solution, and a Nitze cystoscope was introduced. This was held in place by an assistant, while a suprapubic incision down to the bladder wall was made. The prevesical fat was well separated and the tissues well retracted by wide lateral retractors so as to give a good exposure of the bladder wall. The growth was then inspected through the cystoscope, the right hand holding the cystoscope; with the left, a needle was pressed on the fundus of the bladder, and the dimpling caused thereby was readily seen through the cystoscope. The needle was carried first to the left of the growth at a sufficient distance to give a margin of healthy bladder wall, it was then plunged into the bladder, being held in place by an assistant. The same procedure was carried out at the right of the growth and at the lower border. An attempt to place a needle above would have penetrated the parietal peritoneum, as this was involved in the growth. A sharp knife was then carried to the outer side of the three needles placed around the growth, the portion of the bladder wall to be removed being clamped at its cut edge as soon as the incision was started. The bladder wall containing the growth was lifted up by the clamp and held by an assistant. The fluid left in the bladder was removed by a large syringe through the suprapubic wound to prevent its entrance into the peritoneal cavity. The incision in the bladder wall was then carried upward into the peritoneal cavity and a portion of parietal peritoneum covering the growth was removed. The bladder and peritoneal wounds were then closed by two rows of sutures, a suprapubic drain being left in the bladder.

64. **Intraperitoneal Cystotomy.**—Tennant advocates transperitoneal cystotomy in selected cases. He says that more successful results in bladder work may be accomplished, with considerably less mortality and much greater comfort to the patient, by the intraperitoneal route. In two cases, he found that it was possible to perform an intraperitoneal cystotomy in the presence of very marked cystitis. Both patients had a cloudy alkaline urine, with pus, colon bacillus and other pyogenic micro-organisms, but after careful consideration, it seemed best to use the transperitoneal route. Both patients were operated on, the bladder immediately closed, and successful results secured, sparing the patients annoyance and apprehension of a urinary fistula.

66. **Sac of Femoral Hernia.**—Murray holds that clinical experience, operative experience, and also evidence obtained from necropsies and from the pathologic laboratory are strongly in favor of the view that the sac of a femoral hernia is of congenital origin and is not acquired.

67. **Silver Wire in Cure of Hernia.**—Wiener regards chromic catgut as an unreliable suture material, but Pagenstecher linen, he thinks, is an excellent suture material. Silver wire, in some form, is a suitable suture material in many recurrent cases; and at primary operations when the tissues are poorly *developed. Immediate recurrence, in uninfected cases, in his* opinion, is usually due to chromic gut. There will be fewer recurrences, he declares, if surgeons entirely discard chromic gut sutures.

68. **Pneumatic Tourniquet.**—Bunts has devised an apparatus which is made of rubber and linen and consists virtually of two long rubber bags fastened together along their inner margins, but connected at the middle by an opening through this fastening which permits the air to circulate simultaneously in both tubes when inflated. If it be made of a single rubber bag, the inflation will cause the superimposed turns of the tourniquet to roll off of each other and thus relieve the constriction. With the double tubes this cannot occur, and the tourniquet remains exactly where placed. It is made of much the same material as the familiar obstetrical pad, which is sufficiently elastic, very strong and durable and can be readily sterilized. It has a tapering end which, after the tourniquet is in place, is tucked under the inflatable part and becomes fixed as soon as pressure is applied. From the middle of one of the bags projects a rubber tube with an offshoot and two stop-cocks, which permit, respectively, inflation by means of an attached bulb, and gradual diminution or total abolition of pressure by opening and allowing the escape of the air. If done slowly, undoubtedly venous engorgement would take place, but the inflature may be rapidly accomplished by a few pressures on the bulb, and if still greater precaution against congestion is needed, the limb may be elevated or a Martin badge applied before compressing with the tourniquet. It can be applied uninflated to the limb prior to its preparation for operation and then, when needed, the circulation can be shut off by compression of the bulb without any disarrangement of the preparations about the field of operation. If, for any reason during the operation, it is desired to restore the circulation or to see whether the vessels have been secured, the air may be slowly allowed to escape by the anesthetist or nurse by opening the stop-cock, and controlled instantly by the reinflation of the tourniquet, without having to readjust it.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

November

71 *Obstetrics and Modern Gynecology. A. A. Miller, Syracuse, N. Y.
72 *Present Status of the Colon Tube. H. W. Yates, Detroit.
73 *Diagnosis of the Chronic Surgical Lesions in the Upper Abdomen. C. N. Smith, Toledo, Ohio.
74 *Problems in Uterine Cancer. W. B. Chase, Brooklyn, N. Y.
75 *Statistics of Cancer in the Female. K. I. Sanes, Pittsburg, Pa.
76 *Technic of the Radical Abdominal Operation for Cancer of the Uterus. J. H. Jacobson, Toledo, Ohio.
77 *Diagnosis of Tubal Abortion and Rupture. C. E. Congdon, Buffalo, N. Y.
78 *Results at Lebanon Hospital of Deferred Operations for Extrauterine Pregnancy. R. Waldo, New York.
79 Tumors of the Bladder. J. F. Erdmann and J. F. McCarthy, New York.

80 *Puerperal Wound Intoxication and Wound Infection. H. Schwarz, St Louis
81 *Serotherapy and Bacterial Vaccines in the Treatment of Puerperal Septicemia H Schwarz, St. Louis
82 Scarlatina J F Bell, Englewood, N. J.
83 Purpura T J Etterich, Pittsburg, Pa

71 to 75, 77, 78. Abstracted in THE JOURNAL, Oct. 8, 1910, pp 1309-1312.

76 **Abdominal Operation for Cancer of the Uterus.**—The author's operation is a combination of Bier's spinal anesthesia with Bumm's modification of the Wertheim technic in which the vaginal vault is left open and early postoperative Roentgen-ray treatment instituted Spinal anesthesia, he thinks, is especially adapted for this operation.

80, 81. Abstracted in THE JOURNAL, Oct. 15, 1910, p. 1402.

American Journal of Surgery, New York

November

84 Iodin Its Most Important and Latest Uses J. L Wollheim, New York
85 *Treatment of Lateral Curvature of the Spine C R Keppler, New York
86 Fractures and Dislocations of the Spinal Column W. L Estes South Bethlehem, Pa
87 Local Anesthesia A E Hertzler, Kansas City, Mo
88 An Improved Composite Cystoscope J F. McCarthy, New York
89 A Foot and Leg Table a Hand Table, for Use in Surgical Out-Patient Departments W M Brickner, New York

85 **Lateral Curvature of the Spine.**—For several years Keppler has been using in these cases a simple apparatus which he constructed It works on the basis of leverage with the patient lying face downward on a mattress To a vertical bar two long arms are attached by means of sliding joints; and fastened to these are two smaller bars with the corrective pads At the free end of each arm is a hook on which the weight hangs The patient lies in front of the machine with the convexity of the spinal curvature immediately opposite the upright base, if the curvature is a double one the dorsal deviation is placed thus One arm is fastened very low on the upright, the pad being placed on the rib projection at the point of greatest deformity; thus the arm rises, the weight is high, pressure of the pad is down and outward. The other arm is fastened high on the upright, with the pad placed over the lower opposite deviation; it thus slants downward, the weight is low, the pad presses down and inward. The weights being attached—at first from 5 to 10 pounds each, later up to 25 pounds—the corrective act is exerted, and is continued from five to ten minutes. In single curvature only one pad is used; in round shoulders a smaller pad is placed between the scapulæ, while the shoulders are raised by means of a sand bag placed under the clavicles; and the apparatus can be used actively by placing the pad against the concave side, attaching a light weight and having the patient push up and outward against it intermittently. To be effective, Keppler says the active treatment must be given at least twice or three times a week. The daily use of a few simple general exercises and some suspension apparatus is also desirable. In fact, the home life of the patient must be well systematized, and the hours of school, rest, sleep and play regulated. The time of treatment varies; in simple cases good results may be obtained in about six months with occasional subsequent supervision; in severe and spastic cases no time limit can be set.

Journal of the Arkansas Medical Society, Little Rock

October

90 Uncinariasis C W Stiles, Washington, D C
91 Etiology and Pathology of Uncinariasis W. H. Deaderick, Helena
92 Diagnosis and Symptomatology of Uncinariasis. A G McGill, Little Rock
93 Treatment of Uncinariasis W S Stewart, Pine Bluff
94 Complications in Abdominal Surgery. C. S Holt, Fort Smith.

Journal of the Minnesota Medical Association and the Northwestern Lancet, Minneapolis

November 1

95 *Nephropexy W Courtney, Brainerd
96 Necessity of Institutional Care for the Tuberculous E L Touhy, Duluth
97 *Treatment of Varicose Ulcers J. E Moore, Minneapolis
98 Digitalis J T Moore, Minneapolis

95. **Nephropexy.**—Courtney's method is, to some extent, a modification of the Edebohl operation. A transverse incision, from 1 to 1½ inches in length, is made at each pole of the kidney, well over the curvatures, and these are joined, in the form of a capital letter I, by a longitudinal median-line incision on the convex surface of the kidney. The outlined flaps of fibrous capsule are reflected well downward on the lateral surfaces of the kidney, where they remain undetached and are folded into a cord or ligament and so maintained by a whip-stitch of ten-day catgut. Four Pagenstecher linen or thirty-day catgut sutures are then placed at or near the four ends of the newly constructed cord or ligament. These sutures are inserted through the fibrous capsule, behind the ligament, over which a turn of each suture is made at a distance of about half an inch from the point of first insertion. The two ends of each suture are grasped separately by catch-forceps. The kidney is then partly returned within the wound, and the incised edge of the fatty capsule is brought forward and sutured to the fibrous capsule, below the newly constructed ligament, with fourteen-day catgut. The sutures may be interrupted at intervals of about three-fourths of an inch, and should surround the circumference of the opening in the fatty capsule The kidney is then completely replaced within the body, and, by means of needles, the two upper linen sutures, previously placed behind and around the ligament, are passed through the muscular and fascial planes only, of the abdominal wall, external to the incision and as near the twelfth rib as may be conveniently possible. The ends of each of these two sutures are again grasped in catch-forceps until the two like sutures below have been similarly placed, when all are tied sufficiently snug to raise and maintain the denuded surface of the kidney in close apposition with the raw surface of the quadratus lumborum muscle. The wound, or incision, is closed in the usual tier-suture manner and without drainage.

97 **Varicose Ulcers.**—The principle of Moore's treatment is mild medication, combined with continuous pressure by means of properly adjusted strips of adhesive plaster. With the average ulcer, all the preparation necessary is a thorough washing with soap and water before applying the plaster. A painful or so-called irritable ulcer should be swabbed very thoroughly with 95 per cent. phenol, repeated several times at intervals of three or four days, before applying the adhesive strips The phenol should be followed in about two minutes by alcohol, after which a gauze dressing should be applied. This treatment will relieve the pain and sensitiveness in a very few days, so that the pressure can be applied without causing pain When there is eczema about the ulcer this should be healed by the usual methods before applying the adhesive plaster. In case of annular ulcer, involving the whole circumference of the limb, the only successful treatment is amputation. After washing and shaving the leg it should be held horizontal by placing the heel on the seat of one chair while the patient is seated on another. The ulcer is then covered with dry calomel so that the cavity is filled level with the skin Beginning at a point about 2 inches below the ulcer, strips of adhesive plaster from an inch to an inch and a half in width should be applied around the limb, so that the strip above overlaps the strip below about a quarter of an inch, like the shingles on a roof. A sufficient number of strips should be applied so that the upper one extends 2 inches above the upper edge of the ulcer. They should be applied firmly, and flat against the leg, so that one edge does not press into the flesh. They should not completely encircle the leg, but should leave a strip of uncovered skin along the back about an inch wide. A roller-bandage should then be applied from the base of the toes to the knee. At first it is necessary to change the dressing every day, for the discharge from the ulcer mixes with the calomel, forming a thick paste which oozes out between the adhesive strips, and unless changed this often irritates the skin, loosens the straps and acquires an offensive odor. In a short time, however, the amount of discharge diminishes, and the strips can be left on for two or three days, the length of time being regulated by the amount of discharge. In a very few days the granulations begin to assume a healthy color, and a blue line of new skin appears around the edge of the ulcer. The progress is usually most gratifying, and after the discharge has diminished so that

the dressing requires changing only every third day, the patient can see the improvement that has taken place between dressings.

Southern Medical Journal, Nashville

October

99 Surgery of Tetanus G W Broome St Louis
100 Address at Opening of Jefferson Medical College, Philadelphia G C Savage, Nashville
101 *Preparation Required for the Practice of General Surgery G W Green, Chicago
102 Treatment of Advanced Cases of Appendicitis with Intestinal Paresis J N Lewis Roanoke Va
103 Capsule Cataract Operation J P Crawford, Nashville
104 Intubation in Desperate Cases O H Wilson Nashville
105 Tubal or Extra Uterine Pregnancy J H Carter, Memphis, Tenn
106 Methods for the Control of Fever W L Secor, St Petersburg, Fla

101. Abstracted in The Journal, Sept 24, 1910, p 1134

California State Journal of Medicine, San Francisco

November

107 Experimental Nephritis E C Dickson, San Francisco
108 Nephritis of Bacterial Origin J J Hogan, Vallejo
109 Hematuria, An Initial Symptom of Chronic Nephritis R L Rigdon, San Francisco
110 Dietetic Treatment of Nephritis R Bine, San Francisco
111 Pellagra W A Clark San Leandro
112 History of Rabies in Southern California S P Black and L M Powers, Los Angeles
113 Demonstration of a Dissection Showing an Anomaly of the Arteries of the Leg F E Blaisdell, San Francisco
114 *Ureterocystostomy G B Somers, San Francisco

114 **Ureterocystostomy.**—The chief feature of this operation is the deliberate opening of the bladder, for the purpose of affording working space in carrying out the anastomosis With a liberal median incision the pelvic cavity is thoroughly exposed The ureter is liberated down to a point as near as possible to the base of the bladder. It is there cut off, leaving a free length of about 1½ inches The bladder is opened by a median longitudinal incision, about 2 inches in length This gives free access to the whole of the interior, with plenty of working space A point is selected on the surface of the bladder, which the free end of the ureter will easily reach If there be any difficulty in making the ureter reach the bladder, the latter may be dissected away from the pubes sufficiently to allow approximation The bladder is punctured at the selected point, and the ureter drawn through. When the broad ligament is present, the puncture is made to pass through this structure at a convenient point The end of the ureter is split, so as to make an upper and a lower flap, each about 1 centimeter in length The mucosa of the bladder where these flaps are to be united, is slightly denuded, and then each flap is sewed to the bladder wall by fine chromicized catgut The operation is completed by closing the bladder and covering the remainder of the ureter as completely as possible with peritoneum In the after treatment the bladder is kept empty by catheterizing every two or three hours for several days A permanent catheter should not be used, as it is almost sure to produce cystitis

Philippine Journal of Science, Manila

August

115 *Uncinariasis Among White Men in the Philippines W P Chamberlain, U S Army
116 *Prevalence of Intestinal Parasites in Rizal and Cavite Provinces and in Cagayan Valley R S Rissler and Liborio Gomez Manila
117 Myzomyia Rossii as a Malaria Carrier W T deVogel, Samarang Java
118 *Antimalarial Prophylactic Measures and Their Results at the Naval Station, Olongapo, P I A W Dunbar, U S Navy
119 Malaria in the Philippines Especially Its Treatment with Arsenophenylglycin F B Bowman Manila
120 Contagious Ophthalmia G E Brook, Straits Settlements, Singapore
121 Present Position of the Leper in View of the Resolutions Passed at the International Conference on Leprosy at Bergen 1909 A Perry Ceylon
122 Tuberculosis Among Filipinos W E Musgrave and A G Sison, Manila
123 Blood Pressure in the Tropics W E Musgrave and A G Sison Manila
124 Tuberculosis in the Philippine Islands I W Brewer, U S Army
125 *Mali Mali, a Mimic Psychosis in the Philippine Islands W E Musgrave and A G Sison Manila

115. **Statistical Study of Uncinariasis**—According to Chamberlain, uncinariasis is found among the Filipinos in probably not over 15 per cent of the general population, and is mild in type and of small economic importance The percentage of infection is higher in adult males, reaching 50 or 60 per cent among the Philipino scouts and Bilibid prisoners. From 65 to 85 per cent of the southern bred white recruits for the United States Army are infected with uncinaria, usually mildly, and these infected soldiers have been coming in considerable numbers to the Philippines, thus importing *Uncinaria americana* The majority of these soldiers, if not reinfected, become free of the worms by natural processes in about five years Uncinariasis, sufficiently marked to be evident clinically, is very rare among American men in the Philippines Even a routine stool examination among Americans showed few cases, seventy one out of 8,000 examinations at the Division Hospital and nineteen out of 800 examinations at the Fort William McKinley Hospital An exhaustive stool examination among Americans in the Philippines, Chamberlain believes, would probably show a somewhat greater frequency. Of the ninety cases of uncinariasis found at the above hospitals, only eleven were admitted for uncinariasis Forty five were admitted for gastro intestinal troubles, dysentery, diarrhea and sprue being the most frequent causes In about thirty out of ninety cases (33 per cent) there is a probability that the infection originated in the United States and was imported into the Philippines In the remaining sixty cases it is probable that infection occurred in the Philippines, and there is reason to believe the parasites were usually introduced through the mouth with food or water Chamberlain says that uncinariasis is of sufficient importance among Americans in the Islands to make an occasional careful search for ova desirable

116 **Intestinal Parasites**—The result of the work done by Rissler and Gomez is in accord with that of other authors regarding the almost universal infection of the whole population of the Philippines with intestinal parasites The chief infections in the districts covered by this report are from *Ascaris* and *Trichuris*, and their distribution is rather uniform, although in Santa Isabel the percentage of infection with *Trichuris* fell very low The distribution of the hookworm varies, Santa Isabel showing the highest percentage ever recorded in the Islands Males were more affected than females The percentage of hookworm infection does not appear to be affected by the nature of the soil on which the people live The *distribution of Amœba shows still greater variation* In and around Manila the percentage of infection is higher, but in the Cagayan Valley it is rather low Infection with *Hymenolepis*, while not found in Cavite and Rizal Provinces, is rather frequent in the Cagayan Valley Children are mainly infected Tapeworms are also more frequent in Cagayan and Isabela than in Cavite and Rizal The parasite known as the worm of Cochin China diarrhea, or *Strongyloides intestinalis*, was not found in Cagayan and Isabela, whereas it was frequently encountered in Cavite and Rizal Monads were found rather uniformly distributed in the cases, but ciliates were not encountered in the Cagayan Valley

118 **Antimalarial Prophylactic Measures**—The value of efficient sanitary measures is well shown in Dunbar's report A board appointed for the purpose recommended (1) filling in of the swampy land on the range and further clearing of the ground so that there should be no shelter for the mosquito within at least 200 yards of the range, (2) the erection of thoroughly screened quarters for officers and men. These recommendations were carried out and the quarters completed by the date of the opening of the target season. The buildings are of light construction, elevated about 4 feet from the ground, well ventilated and completely screened During the first quarter of last year there were 105 admissions to the hospital ship, giving 2,214 sick days, and the station sick quarters were constantly kept filled, and this has been the yearly experience since the range was established During the elapsed part, over one half, of the first quarter of the year, there had been eight admissions to the hospital ship for malaria, giving 120 sick days, and there have been only fifty-three patients treated at the sick quarters The administration of from 4 to 8 grains of quinin daily has been found

necessary. The treatment is, as a rule, continued for three weeks, but not necessarily or usually in the larger doses.

125 **Mali-Mali in the Philippines.**—Musgrave and Sison point out that the peculiar mimic psychosis in the Philippines known by the local name mali-mali is closely related to, but distinct from, the tics. Such somewhat doubtful tics as Giles de la Tourette's disease, jumping tic of Beard, myriachit of Hammond, and the salutatory tics in general, have much in common with the Philippine affection, but in all of these, with the possible exception of latah, there are indications of autospasm which is lacking in the local disease. Ramanemana, the dancing mania of Ramisiary, St. John's and St. Guy's dance, and perhaps other allied conditions, are more nearly hysterical manifestations; and while they have much in common with mali mali, they all show evidence of autostimulation, and when once established are capable of prolongation without any outside influence. The authors believe that mali-mali is probably an expression of mental degeneracy similar to that generally accepted for other conditions of the same group. However, its clinical manifestations do not clinically agree with those given for any other similar disease, and for this reason it is classified by them, tentatively at least, as a clinical entity.

Vermont Medical Monthly, Burlington

October 15

126 A Decade in Medicine W B Havens, Chester, Depot, Vt
127 Diagnosis of Incipient Tuberculosis W C Klotz, New York
128 Fracture of the Patella H G Stetson, Greenfield, Mass.

Pennsylvania Medical Journal, Athens

October

129 President's Address Purposes of the Society. T. B Appel, Lancaster
130 Essentials of the Surgical Reconstruction of the Human Skeleton J B Roberts, Philadelphia
131 Simplest Method of Preparing Reliable Catgut J D Singley, Pittsburg
132 Ex Uno Plura. Diversiform Influenza W B Konkle, Montoursville
133 The County Society W T Williams, Mount Carmel
134 The County Society and the Unit L L Doane, Butler
135 What the General Practitioner Can Do in the Prophylaxis of Insanity. W. W. Richardson, Norristown

American Medicine, Burlington, Vt.

October

136 The Personal or Business Side of a Doctor's Life J MacDonald, Jr., New York
137 A Fool's Paradise—Snap Diagnoses L Keir, Brooklyn, N. Y.
138 Treatment of Menorrhagia in Young Women G H. Mallett, New York
139 Gastric Juice from the Living Pig and Its Therapeutic Application M Hepp, Paris, France
140 Dermoids J H Long, Brooklyn, N. Y
141 Treatment of Typhoid C J Strong, New York.
142 Acromegaly M Packard, New York

Atlanta Journal-Record of Medicine, Georgia

October

143 Diagnostic Points of Mental Diseases and Why the Commitment Proceedings of the Insane of Georgia Should be Entirely Revised J C King, Atlanta
144 Ehrlich's "606" in Syphilis E. G. Ballenger, Atlanta.
145 Pellagra T E Taylor, Tuskegee, Ala
146 Id A D McLain, Salem, Ala
147 Christian Science the "Religio Medical Masquerade" H R. Slack, LaGrange, Ga
148 Intestinal Excessive Activity G M Saleby, Roanoke, Ala
149 Pulmonary Tuberculosis Treated by Artificial Pneumothorax M E. Lapham, Highlands, N. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London

October 29

1 *Diaphragmatic Hernias A Keith
2 *Typhoid Perforations and Perforations of the Gall-Bladder. G E Armstrong
3 *Bacillus Coli* Infections, Especially Their Recognition and Comparative Frequency J S. Dick
4 *Diet of a Patient Before Operations Under General Anesthesia. R W Collum
5 Ophthalmic School Clinics in the Country. R B. Hird
6 Submucous Resection of the Nasal Septum T. J. Faulder
7 Three Bad Prognostic Signs in Eclampsia W. F Shaw
8 The Future of Ocular Therapeutics G. A Berry.
9 Use of Carbon Dioxid Snow in Eye Work. N. B. Harman and E R Morton.
10 Conditions Which May Account for the Greater Prevalence of Cataract in India. L J. Pisani
11 Diagnostic Values of Ophthalmoplegia, Partial and Total. J. S. R Russell
12 Education of High Myopes N B. Harman
13 Operative Treatment of High Myopia. A H. Thompson.
14 Extended Use of Buccal Mucous Membrane in Enlarging Certain Forms of Contracted Socket A. H Benson.
15 The More Chronic Forms of Anterior Uveitis W. T. H. Spicer and S Mayou
16 Drainage After Cataract Operations G. H. Fink
17 School Clinics N B Harman
18 Factors That Make for an Efficient Circulation. E A Schafer.
19 Food Requirements for Sustenance and Work C. H Melville.
20 Demonstration on Tonometric Determination of Dissolved Gases A Krogh.
21 Forces Governing the Gas Exchange in the Lungs A Krogh.
22 *Excretion of Creatin in Diabetes Mellitus M. R. Taylor.

1. **Diaphragmatic Hernia.**—Hernias through the diaphragm, Keith says, fall into two groups, the congenital and the acquired, the former being to the latter in the present series of thirty four cases as 26:8. The congenital hernias are chiefly those which occur at the unclosed pleuro-peritoneal passages (twenty one cases), the others being formed (five cases) by developmental extrusions of the abdominal viscera, chiefly liver, through the septum transversum. In a certain proportion of congenital cases it appears possible to adopt surgical measures for the cure of the condition

2 **Typhoid Perforations.**—There were treated in the Montreal General Hospital from 1897 to May, 1910, 2,051 cases of typhoid During this period there occurred ninety-three cases of perforation. In this series, then, perforation occurred in 4.53 per cent of the cases. In addition, Armstrong operated on three patients with typhoid perforation in another hospital and on one patient in a private house; of these four patients, three recovered. There are then, ninety-seven perforations, of which seventy-eight were operated on, and twenty-four, or 30.76 per cent. recovered. During the year 1909, there were sixteen perforations; nine were operated on, and nine, or 56.25 per cent. of the patients recovered. The figures for the year 1909 and four months of 1910, or up to May last, are the best of all. During this period there were twenty-two perforations, nineteen of which were operated on, with nine, or 47.36 per cent., recoveries. In this series of twenty-two perforations two very promising cases were lost, apparently by delay in obtaining consent to operation after the perforation was diagnosed. The increased percentage of recoveries, according to Armstrong, is, in part, due to the character of the epidemic, but chiefly to earlier diagnosis and earlier closure of the opening. The earlier diagnosis has been due largely to the development of the idea among the resident hospital staff that it is a serious reflection on their skill and professional attainments to fail to recognize a typhoid perforation, no matter how slow and chronic may be its appearance The final step toward lessening the mortality rate in typhoid perforation is the recognition by every one that it is a serious and humiliating oversight to fail to recognize a perforation when it occurs. An analysis of the cases show that perforation is more common in the severe forms of typhoid Fifty of the perforations occurred in cases described as severe forms of typhoid. Fifty of the perforations occurred in cases described as severe, twenty in moderately severe cases, and one in a mild case. Six perforations occurred in ambulatory cases, and in one of these it seemed highly probable that perforation had occurred sixty hours before admission to the hospital. Strange to say, this man recovered. Of the ninety-seven patients in whom perforation occurred, only seventy-eight were submitted to operation. Nineteen patients were not operated on for various reasons, the chief being failure to obtain consent from the patient, parents or guardians, the desperate condition of the patient, and non-recognition of the lesion. Twenty-six cases of perforation were associated with hemorrhage. Among these are not included instances of small blood-stained stools but only those cases in which the quantity of blood lost amounted to several ounces. As a class they are unfavorable. Three of these patients, however, recovered. In six cases, or 7.7 per cent, more than one perforation was found at the time of operation. The perforations were generally not far removed from each other In

four cases a second operation was undertaken for second perforation; with one recovery. In two cases, recovery would have followed the second operation had not a third perforation occurred—in one case seven days after the second operation and in the other twenty-one days after the second operation. In one case two operations were performed. At the first operation one perforation was closed. At the second operation two perforations were closed. The child finally died, and at the necropsy the lower two feet of the ileum were necrotic, twelve perforations being counted.

It has been Armstrong's practice to close the opening in the simplest way, that is, by one or two sutures through all coats, and a row of Lembert sutures placed transversely at right angles to the long axis of the bowel. He then infolds in a similar manner with a row of Lembert sutures all the ulcers found to have a thin, suspicious, necrotic-looking base. Two alternatives have been carried out in a few cases. In two the suspicious portion of the gut was resected with end-to-end anastomosis. Both patients died. In two the suspicious looking gut was delivered, and cared for outside. The gut was wrapped in gauze, and allowed to rest on the abdominal wall. These two patients, after doing well for a time, eventually succumbed, one of them from pneumonia. Armstrong says that resection should probably be reserved for special cases in which the danger of further perforations over a considerable section of intestines seems imminent, and the patient's general condition warrants undertaking an operation that requires a little more time and a little more shock.

4. **Diet Before Operation.**—Collum is more liberal in this respect than is customary. Thus, supposing an operation (in a healthy subject) is to be performed at 9 o'clock in the morning, he says the patient should be left asleep, unless he awakes of his own accord, until at any rate 7:30, when he may be given his enema. Then, if he be accustomed to breakfast about 8 o'clock, he may have a thin slice of bread-and-butter, or a small piece of toast, with as much tea to drink as he desires. He will then be able to settle down much more contentedly to his newspaper until the surgeon arrives. If the operation be at 10 or 11 o'clock, he may have a similar breakfast, but with two thin slices of bread-and-butter, if he wishes, or a somewhat larger piece of toast, provided his usual breakfast hour be 8 o'clock. If, however, he be accustomed to breakfast at 9, the amount of solid food should be as in the first case, unless the excitement of the approaching ordeal has caused him to awake earlier than usual, under which circumstances he may also have his small meal a little earlier. If the operation be arranged for 12 or 1 o'clock, he may be given an ordinary light breakfast at the usual time; meat, however, being avoided. A glass of water might in this case, be taken with advantage about 11 o'clock. For an operation at 2 or 3 o'clock, the ordinary breakfast should be taken at the usual time, and a cup of hot clear soup or beef-tea at 1 o'clock, together with a little water to drink. This same arrangement is suitable for a patient to be operated on at 4 o'clock, except that in this instance a little toast, bread, or biscuit may be given with the soup. If 5 o'clock be the appointed hour, the breakfast and lunch should remain the same, but in addition a cup of tea may be taken at, or a little before, 4 o'clock. If the hour is 6 o'clock, the patient may have his ordinary breakfast, and then a light luncheon consisting of fish or poultry at about 1 o'clock, followed by tea with bread-and-butter at 4 o'clock. Finally, a patient who is to be operated on at 7 o'clock may partake of his usual breakfast, lunch and tea, simply avoiding currant cake or anything rich at tea-time. No fruit of any kind should ever be taken on the day of the operation.

22. **Excretion of Creatin in Diabetes Mellitus.**—In Taylor's present series of cases—sixteen in number—it was found that the output of total nitrogen in diabetes was not always greatly increased even with a comparatively high intake of protein; indeed, the nitrogen was frequently abnormally low. There seemed to be some connection between the carbohydrate metabolism and the creatin-creatinin metabolism. As regards creatinin, it was found that the output was not increased to any considerable extent even when the patient was on a highly nitrogenous diet. Creatin, on the other hand, a substance never found in the normal urine if the diet be free from creatin and creatinin, was always found. It was present even when the patient was kept on a creatin-creatinin free diet. Some further work was carried out in conjunction with Dr. E. P. Cathcart on the creatin excretion after the induction of glycosuria by means of injections of phloridzin. Here it was found that if the animal were allowed only a small quantity of carbohydrate in the diet creatin appeared in the urine during the time sugar was being excreted. It disappeared as soon as the sugar excretion ceased. On the other hand, if the animal were given very large amounts of carbohydrate, so that even during the period of glycosuria there was still an abundance of sugar in the body, then no excretion of creatin accompanied the output of sugar in the urine. It was further found that fats, even in very large amounts, could not replace the carbohydrate. A liberal supply of fat combined with an amount of carbohydrate, sufficient to prevent the appearance of creatin in the urine under normal conditions, did not check the excretion of creatin when glycosuria was induced.

Lancet, London

October 29

23 The Chief Aim of Medicine. S. Delépine.
24 Hematemesis. D' Duckworth.
25 Acute Pancreatitis; Operation; Recovery. A. E. Barker.
26 *Phagocytosis of Erythrocytes by Endothelial Cells. W. O. Meek.
27 Delayed Chloroform Poisoning. E. D. Telford.
28 Poisoning by Aconite. W. Edgecomb
29 Method of Removing Nasopharyngeal Fibromata. T. Guthrie.
30 *Treatment of Ascites by Drainage Into the Subcutaneous Tissues of the Abdomen. P. Paterson.
31 Esophoria Not Caused by Refractive Errors. R. A. Morrell.
32 Malignant Pustule. L. A. Parry.
33 Treatment of Syphilis with Ehrlich's "606" (Dioxydiamido-arsenobenzol). W. Wechselman.

26. **Phagocytosis of Erythrocytes by Endothelial Cells.**—Meek found that preparations of endothelial cells are especially suitable for observations on hemophagocytosis. Human blood serum, whether from "natural" or "immune" sources, which cause agglutination of other red-blood corpuscles, can be shown to also bring about phagocytosis of these erythrocytes by endothelial cells. The amount of "hemo-opsonin" in such sera is closely related to the amount of "hemagglutinin" which they contain.

30. **Ascites and Subcutaneous Drainage.**—Paterson employs a glass drain of such a shape that it will not slip into the peritoneal cavity. These drains or buttons are of various sizes, so that a suitable one can be chosen for each case. The buttons consist of a perforated glass cylinder expanded into a flange at each end. The largest size measures 1 inch across the flanges, and has a canal 1/12-inch wide. The flange itself has a thickness of about 1/16 inch. The diameter of the flanges and the width of the canal may be the same in the various sizes; but it is essential that the cylindrical part should vary in length, as this part has to pass through the thickness of the abdominal muscles, and as this thickness varies in different individuals so also must the length of this part of the button. Care must be taken to have all the edges and corners rounded and that every part is perfectly smooth. The operation is a simple one. An incision, about 3 inches long, is made in the middle line below the umbilicus, and the peritoneal cavity is opened in the line of the incision. If the abdomen has not been previously tapped the greater part of the ascitic fluid escapes at this stage. The omentum is then drawn down and removed at a level well above the point where the drain is to be placed, because, if left, it very soon passes into the opening in the drain and completely blocks it. The subcutaneous tissues are now dissected outward, on one side, till the semilunar line is exposed, and through this an opening is made into the peritoneal cavity. This opening should just be large enough to permit the button being placed in position. The drain may be passed either from the peritoneal or subcutaneous side. but if from the latter care must be taken to avoid stripping the peritoneum from the edge of the opening when inserting the tube, or the flange may come to lie between the peri-

toneum and the subperitoneal tissues. By slipping one flange edgeway through the opening there is no difficulty in placing the button in position. When a suitable size has been chosen one flange should lie flat on the peritoneum and one on the abdominal aponeurosis, without any pressure being exercised on the intervening tissues. If too long, the apparatus would project into the peritoneal cavity, and the intestines might get nipped between the flange and abdominal wall; while if too short, the button would tend to cut its way through the thickness of the tissues in its grasp. If the opening for the drain has been made too large and the edges do not grip the button firmly, a purse-string suture should be placed close to the button on the aponeurotic side, so that when tightened the soft tissues are brought into close contact with the groove in the drain. The subcutaneous tissues are next closely stitched by a continuous suture to the anterior layer of the sheath of the rectus. This suture is placed about 1 inch from the margin of the primary incision and parallel with it. By this means the superficial end of the drain is shut off in a compartment of its own, and the fluid, as it escapes from the peritoneal cavity, is prevented from throwing too much strain on the suture closing the skin incision. The primary wound is sutured in the usual manner, the skin being closely stitched by a buttonhole suture to prevent any leakage. A collodion dressing applied to the wound gives additional support. This dressing is reapplied as often as required till the skin wound is firmly healed. For one or two days afterward the patients usually complain of pain in the neighborhood of the button, but when this has passed off no further discomfort is experienced. If the quantity of peritoneal exudate be considerable, a fluctuant swelling, almost the size of the fist, forms within twenty-four hours in the subcutaneous tissues around the drain; but as absorption becomes established in the superficial vessels the swelling diminishes, till only a slight edema remains to show that fluid is still escaping. When the exudate is small in quantity the swelling does not pass beyond the state of edema. Paterson has performed this operation in several cases of ascites secondary to malignant disease, and also in cases of cirrhosis of the liver, with marked diminution of the abdominal distention, and to the great relief of the patients.

Australian Medical Journal, Melbourne

September

34 Flatulence and Its Treatment J Jamieson
35 Quinsy T K Hamilton
36 Importance of the Upper Respiratory Tract in Everyday Practice W. K Hughes
37 Headaches Caused by Eye Strain P Webster
38 Ophthalmology in Relation to General Medicine E L Gault
39 Squint E R Sawyer
40 Acute Septic Generalizing Peritonitis; Operation; Recovery R B Duncan and W R Groves
41 Third Series of Fifty Consecutive Celiotomies A. J. Nyulasy

Quarterly Journal of Medicine, London

October

42 *The Pulse Immediately Preceding the Epileptic Attack. A. G. Gibson, T. S Good and R G Penny
43 *Influenzal Septicemia, with a Short Review of the Present Status of *Bacillus Influenzæ* H Thursfield
44 *Hereditary Hemophilia T Addis
45 Hematoporphyrinuria Not Due to Sulphonal T K Munro
46 *Two Cases of Acute Endocarditis, J. Cowan, A. M. Kennedy, A R Paterson and J H Teacher
47 *Tuberous (Tuberose) Sclerosis J. S Fowler and W. E C. Dickson
48 *Coupled Rhythms of the Heart J. Cowan and W. T Ritchie
49 Outlook of Sufferers from Exophthalmic Goiter. W H White.

42. Pulse Preceding Epileptic Attack.—In the course of a research whose object was to determine in what way, if any, the action of the circulatory organs in epileptics differs from that in normal persons, the authors succeeded in obtaining satisfactory tracings immediately preceding and up to the fit in five epileptic major attacks. The tracings were taken with an Erlanger sphygmomanometer, using an external pressure that was usually below the minimum blood-pressure. The experiments consisted in taking long tracings at varying external pressures, together with a record of the respiration. The patient during the time lay comfortably on a bed. In all the records the respirations are markedly irregular; sometimes an occasional sighing respiration is seen, now and again a suspicion of Cheyne-Stokes respiration or slow tonic waves superimposed on the general respiratory undulations. In the opinion of the observers these variations bear no intimate relation to the fit, though they may be an expression of the conditions in the epileptic brain. They are seen in many epileptics quite apart from the fits or the "fitty" state, they vary much in the same patient from day to day, and they are often to be found in patients without epilepsy, especially in neurasthenics. In the first fit observed, the external pressure in the armlet was 78 mm. Toward the middle of the tracing was a deep respiration followed by a short character. The blood-pressure record is even except for the slight depression that occurs with the deep respiration. Immediately preceding the irregular movements of the lever which indicate the stage of tonic spasm, the upper and lower limits of the pulse oscillate somewhat, but there is no more than a slight lessening of the amplitude of pulsation, and even in the imperfect record of the pulsations when the tonic spasm has begun there are indications that cardiac action is uninterrupted. In the second case there was considerable irregularity in the respiratory tracing. The blood-pressure tracing, though taken at the external pressure of 100 mm., has a small amplitude; it shows well the respiratory undulation of pressure that some persons show more than others. In the second half of the tracings the amplitude lessens much and again increases toward the place where the irregularities which mark the onset of the fit begin. Pulse beats continue right up to the tonic spasm with regularity and only a trivial alteration in general level. The onset of the fit was gradual and allowed of a more detailed study. The records put forward in this paper are said to prove that there is no alteration of the pulse sufficiently definite to effect the amplitude of the wave up to the point when clonic convulsions prevent its being properly recorded, and in more than one record the fit has been noticed to be in progress before the record was interfered with. As regards the blood-pressure, the authors assert that in none of the records does such a lowering of general blood-pressure take place as to suggest that cerebral anemia from a general cause could have produced the convulsion, for in conditions in which lowered blood-pressure produces a general spasm, as for instance in Stokes-Adams disease, the convulsions occur after a time interval of several seconds after the pulse has stopped. In more than one of the tracings the patient was noticed to be in the fit and unconscious while little recognizable change was evident in the pulse or blood-pressure.

43. Influenzal Septicemia.—The two cases of influenzal septicemia which Thursfield records, will, he says, when considered in the light of recent work on so-called influenzal meningitis, lead inevitably to the conclusion that what has been hitherto regarded as a specific organism is, in reality, only one of a group, the members of which have similar, if not identical, morphologic and cultural characteristics, but different pathogenic properties. In certain cases of endocarditis and septicemia, an organism identical in all respects with *B. influenza* can be isolated from the blood, and is in all probability the cause of the illness. Furthermore, organisms identical in all respects with *B. influenzæ* are found in a number of patients who die of the acute specific fevers, especially in the bronchopneumonic areas. Thursfield also believes that Bordet's bacillus, an organism identical in shape and size with *B. influenzæ*, but capable of differentiation in culture, is the probable cause of pertussis, and that a bacillus identical with *B. influenzæ*, both in morphologic and cultural characteristics, but capable of differentiation by a study of its pathogenic effects on animals, is the cause of a septicemic form of cerebrospinal meningitis. Again, an organism identical in all respects, morphologic, cultural, and pathogenic, with *B. influenza* is a cause, he thinks, of suppuration in the middle ear and in the sinuses of the nose.

44. Hereditary Hemophilia.—Twelve patients were examined by Addis. They were descended from six different hemophilic stocks in Scotland, England and Germany. In none of these families was there any known instance of a departure from the characteristic type of transmission, i. e., through the females to the males. His results showed conclusively that there is a delay in the coagulation of hemophilic blood, a delay which in some cases is very pronounced and which far exceeds any retardation of coagulation observed in other diseases. Clinically, the cases fall into three groups. The first is that in which the patients were scarcely ever free, for any length of time, from some sign or other of the disease, even in the absence of any traumatic accident greater than those inseparable from ordinary life. The second group is that in which trivial accidents did not lead to observable hemorrhage. In the third group a still greater degree of injury was required to lead to any appreciable amount of hemorrhage. The only practical difference between the patients of this group and ordinary individuals was that on the occurrence of such a wound or injury as would always produce an appreciable amount of bleeding in any one, the bleeding in them persisted for a longer time. The degree of the defect in coagulation corresponded with the degree of the severity of the clinical symptoms. The coagulation of blood flowing from a wound Addis says is induced by thrombokinase added to it from the tissues, and the rapidity of coagulation varies directly with the amount of this thrombokinase. Much larger quantities of thrombokinase are required to produce rapid clotting in hemophilic than in normal blood. In a wound in a hemophilic, coagulation may therefore only occur in those parts where the concentration of thrombokinase is highest, i. e., on the sides of the wound. But this clot prevents the addition of further quantities of thrombokinase from the tissues, and when the amount of thrombin liberated from the primary clot is insufficient to lead to the complete coagulation of the blood in the center of the wound, bleeding may continue indefinitely. Hemorrhage Addis claims is no more easily induced in a hemophilic than in a normal person. The distinction is not in the occurrence but in the amount of bleeding.

46. **Endocarditis.**—Microscopic examination of the *a. v.* node and bundle in two cases of acute endocarditis revealed well-marked inflammatory lesions in the parts. In one case, in which the *a c* interval in the jugular curve was prolonged, the lesions implicated the bundle; in the other, where the *a c* interval was very short, the node alone was affected.

47. **Tuberous Sclerosis.**—The essential points in the case reported by Fowler and Dickson are: A female infant developed in an apparently normal fashion for a year, then had "fits" lasting for several hours, thereafter remained in a semiconscious condition for four weeks, dying of an intercurrent empyema. During the whole of her stay in the hospital her appearance suggested cerebral mischief, but having departed from the diagnosis of meningitis the authors did not know what was the matter. The lumbar fluid was perfectly clear when first withdrawn, but, as it cooled, became opalescent from a precipitation in it of minute shreds of fibrin about 0.5 mm. long. It was equally unlike the coagulum which often forms in the cerebrospinal fluid from a case of tuberculous meningitis, and the turbidity produced by pus. The brain was found to be slightly increased in size, and scattered over the surface of the cerebrum there were numerous nodules, varying from about the size of a pea to that of a small walnut, about a dozen or more being embedded in the surface of each hemisphere. These nodules were extremely firm, and their position could be determined most easily by running the fingers over the surface, the sudden transition from ordinary soft brain tissue to dense resistant nodules of almost stony hardness being very striking. In color they were pearly white. The pia arachnoid which was thin and comparatively non vascular, was not adherent over them, stripping easily from their surface. The general contour of the convolutions was not disturbed by their presence, the affected convolutions were slightly thicker or broader than normal, and projected to a very slight but appreciable degree above the general level of the cerebral surface. Some of the nodules showed a moderate degree of umbilication, and other irregularities which gave them a finely nodulated or granular appearance, while others again, presented a perfectly smooth surface. On section the nodules were situated mostly in the grey matter, but the larger of them also projected well into the subjacent white matter, which they closely resembled in color. These appearances suggested that the condition was a replacement or diffuse infiltration of the affected areas by some sclerotic process, rather than anything of the nature of syphilitic gummata or tuberculous nodules. No nodules were found in the cerebellum, pons, medulla, or spinal cord, all of which to the naked eye at all events, appeared normal. On making sections of the brain, numerous small nodules, about the size of hemp seeds were found projecting into the lateral ventricles. These were hard and firm like the larger cortical nodules, and were not connected with the choroids.

48. **Coupled Rhythms of the Heart.**—In all the cases of this series presenting a coupled rhythm there have been signs of mitral regurgitation or evidence of cardiac failure. The authors have never observed a coupled rhythm in an individual who did not manifest some evidence of cardiac weakness. The cases in which the coupled rhythm was long maintained were cases of pronounced heart failure, but in others, presenting a coupled rhythm for shorter periods, the degree of heart failure was almost as severe. With the exception of one case in which the ventricular rate was 92.3 per minute, and cases of auriculo-ventricular heart block, the ventricular rate was of moderate frequency. Some of the patients were taking digitalis, others were not. It is claimed that coupled rhythms of the heart may occur from various causes. They are often due to a regularly recurring extrasystole, which is most frequently of ventricular origin. Synchronous contraction of auricle and ventricle and an undue prolongation of diastole necessarily produce an increase of the intracardiac pressures, and are often followed by a premature systole. It is suggested that, whenever an enfeebled heart is unduly irritable in an abnormal site, any excessive rise of intracardiac pressure may induce a regularly recurring premature systole which originates in the irritable area. The coupled rhythm so often noticed in cases of "perpetual arrhythmia" under the influence of substances of the digitalis series, is probably produced by a mechanism similar to that of the coupled rhythm in which an extrasystole recurs after each physiologic beat.

Medical Press and Circular, London

October 26

50 Respiration in Health and Disease. J. F. H. Dally.
51 The Appendix in Middle and Later Life. E. M. Corner.
52 Rheumatic Inflammation of the Serous Membranes. E. Mosler.
53 Symptoms and Treatment of Duodenal Ulcer. R. J. M. Buchanan.

Clinical Journal, London

October 26

54 Carcinoma of the Stomach. J. Sherren.
55 Inguinal Hernia in Children. O. L. Addison.
56 Demonstration of Pathologic Specimens. E. H. Shaw.

Archives des Maladies de l'App. Digestif, Paris

September, IV, No. 9, pp. 497 560

57 *Action of Alkaline Saline Mineral Waters on the Gastric Secretion. A. Theohari and A. Babes.
58 *Hemorrhagic Infarct of the Mesentery and Intestine in Typhoid Fever. E. Chabrol.

57. **Action of Mineral Waters on the Gastric Secretion.**—This article reports the results of experimental research on dogs with a Pawlow fistula. The gastric secretion is notably influenced by different mineral waters, the various elements being influenced in different ways. The water of one of the springs tested contained 9.7 gm. of sodium chlorid and 9.7 gm. of sodium bicarbonate and this water invariably checked the gastric secretion. Water from another spring with 13.2 gm. of the chlorid and only 6.9 gm. of the bicarbonate stimulated the secretion, increasing it by 107 per cent. in some of the tests. The average increase was from 40 to 83 per cent. The free hydrochloric acid increased from 26 to 38 per cent. but the proportion of pepsin was reduced.

58. **Typhoid Infarct in the Mesentery and Intestine.**—Chabrol gives an illustrated description of the findings in the case reported and the clinical picture presented. Should the condition demand immediate operation, examination of the blood,

showing the absence of leukocytosis and hyperfibrinosis, will exclude peritonitis from perforation. Melena is common in both infarct and intestinal hemorrhage. He reviews the literature on the subject, saying that the lesion is generally in the small intestine, especially the jejunum, and that there may be superposed infection.

Lyon Médical, Lyons

October 9, CXV, No 41, pp 589-628

59 *Erysipelas and Peritonitis M Vallas
60 *Temporary Tracheotomy for Foreign Bodies in the Trachea or Bronchi Collet
61 Suppurative Thyroiditis During Whooping-Cough Collet

59 **Erysipelas and Peritonitis.**—Vallas' first patient was a healthy girl of 16, tending a woman with a severe erysipelas of the face The young girl was suddenly taken with serious peritonitis, succumbing on the fifth day. Necropsy revealed an acute streptococcus seropurulent peritonitis but no sign of perforation; the genital organs were normal. In another case a woman of 45 developed symptoms suggesting acute peritonitis but the cecum and appendix were healthy and the focus was found in the peritoneum and the lower part of the ileum. Four days after the mother's laparotomy in the hospital, her child at home, 4 years old, developed erysipelas of the face In Bonnet's case, an infant died with acute purulent peritonitis but all the abdominal viscera were found healthy The second day after the child's death, the mother developed erysipelas of the face. These cases indicate that erysipelas may be contagious during the prodromal stage and that it may induce an isolated peritonitis, and that both the erysipelas and the peritonitis may have been drawn from the same source

60 **Temporary Tracheotomy for Foreign Bodies in the Respiratory Tract.**—Collet advises a simple technic which he has found very useful. As soon as the trachea has been opened and the cannula introduced, he sutures on each side the lips of the wound in the trachea to the lips of the skin wound. This provides a large opening which can be made to gape still wider by traction on the threads. It provides an ample outlet for the foreign body, while it permits thorough inspection of the lower part of the trachea. In one case a cherry stone was coughed up several hours after this opening had been made; the cannula had been introduced and removed a number of times in the interim In the case of one infant the head was lowered and the foreign body, a piece of bone, was readily removed. No special instruments are required as the bifurcation can be readily inspected as soon as the cannula is withdrawn. Collet's experience shows further the remarkable ease with which a foreign body moves around from one side to the other; bronchoscopy may show it *on the right side* at one time and on the left at the next. Another advantage of this technic is that it permits ample intake of air, even without the cannula; it might be found useful also, he thinks, in membranous croup.

Presse Médicale, Paris

October 22, XVIII, No 85, pp. 785-800

62 Eosinophils in Sputum of Asthmatics (L'éosinophilie du crachat des asthmatiques) F Bezancon and S I de Jong
63 Physiologic Bases of Medical Electricity. (Électricité et atrophie musculaires La modalité optima) A. Zimmern and P Cottenot

October 26, No 86, pp. 801-808

64 *The Lung in Heart Disease in Children (Le poumon dans les cardiopathies de l'enfance) V. Hutinel.

October 29, No 87, pp 809-816

65 Metastasis in the Dorsolumbar Vertebræ of Latent Cancer in the Thyroid A Mignon and G Bellot.

64. **The Lung in Heart Disease in Children**—Hutinel comments on the difference between signs in the lungs and pleura in heart disease in children and in adults. There seems to be a closer connection in children between the pericardium and the pleura, he states, so that a process in either is liable to involve the other more readily. The coexistence of double pleurisy with endocarditis and pericarditis, for example, is so characteristic that it sometimes is a clue to the rheumatic nature of the heart trouble when tuberculosis might otherwise be suspected In one such case a youth of 16 grew pale and emaciated and finally was forced to keep to his bed. There was a history of tuberculous peritonitis in early childhood from which he had apparently entirely recovered. The discovery of right pleurisy led the physician to diagnose tuberculosis as the cause of the boy's illness, but Hutinel, who was called in consultation, found the pleurisy bilateral, a systolic murmur at the apex and other signs indicating cardiac involvement; inquiry brought out that there were certain vague pains in the knees. On these bases he excluded tuberculosis and the complete recovery, except for a slight heart trouble, has confirmed his conclusion. Extension of a pleural process to the pericardium is also common; the pleura and lungs should be closely supervised in all cases of heart affections in the young and the heart region explored and auscultated in cases of pleurisy, especially on the left side. Suppurative pericarditis may compress the lung and pleura and induce symptoms suggesting purulent pleurisy, but the attenuation or disappearance of these signs when the patient is placed in the knee-chest position, he declares, aids in differentiating. The smaller the child the narrower the chest, and the more chance for compression of the lung with a pericarditic process. When a child has severe heart disease be cautious in affirming the existence of tuberculosis no matter how extensive the râles. Even a positive response to the cutaneous tuberculin tests may indicate merely some minute tuberculous lesion elsewhere; a negative response is more instructive. As children do not expectorate, as a rule the evolution of the affection is often the only clue to its real nature He cites a number of instances of the various types including two cases in which extreme hypertrophy of the heart caused phenomena suggesting pleurisy on the right or left side but necropsy revealed merely the compression by the enlarged heart. In nearly all the cases cited the condition had been erroneously diagnosed. As the heart is the causal factor in the syndromes, treatment should be directed in this line When the heart is much dilated, the pulmonary veins empty themselves only imperfectly, the innervation suffers and a superposed accidental infection entails serious functional disturbances. Restoration of the heart balance by appropriate measures, however, corrects the other disturbances.

Revue de Médecine, Paris

October, XXX, No 10, pp. 785-856

66 *Venous Asystole with Hypertrophy of the Left Heart and Stenosis of the Right Ventricle S Bernheim
67 *Infantilism as Result of Malarial Infection. H. de Brun

66 **Venous Asystole with Hypertrophy of the Left Heart and Stenosis of the Right Ventricle.**—Bernheim gives the details of ten cases, all in adults between 25 and 61 years old, in which the left ventricle was much dilated with stenosis of the right ventricle. The lesion was a relic of aortic endocarditis in one case, in two it was due to an aortic valvular lesion, in three to atheroma of the aorta and in four to arteriosclerosis; in one case it was accompanied by interstitial and in another by tuberculous nephritis. In one case the patent Botallo's foramen was responsible for the dilatation of the ventricle; in six cases there was concomitant hypertrophy. This material, he states, shows the frequency of venous asystole with hypertrophy of the heart without degeneration of the muscle. It is the consequence of insufficiency of the right heart from stenosis, and this stenosis is produced by hypertrophy of the intraventricular septum which protrudes as a convex dome into the right cavity. He gives an illustration of the typical pathologic anatomic findings which were alike in all these cases. His clinical experience is still wider. The chief clinical sign of the mildest form of the condition is slight venous congestion with cyanosis of the face and enlargement of the jugular veins. The next stage is a more pronounced venous stasis with enlargement of the liver, the kidneys being of the cardiac type, with edema, but the lungs and respiration are still comparatively normal. In the third stage both the greater and lesser circulation show marked stasis and there is complete asystolia. The condition is frequently erroneously diagnosed, he asserts, as pulmonary emphysema with dilatation of the right heart; there may be actually a little

concomitant emphysema or complementary congestion of the lower part of the lung. Differentiation is most difficult when the excentric dilatation is mainly at the expense of the right ventricle, the vertical diameter of the heart not being notably enlarged. If the apparent hypertrophy of the left ventricle induces stasis only in the greater circulation, the thorax retaining its normal respiration and resonance, the trouble is sure to be stenosis rather than dilatation of the right ventricle.

67. **Malarial Infantilism.**—De Brun writes from Beyrouth reporting forty cases of children or youths of pronounced infantile type, weak and mentally backward. All had had chronic malaria since early childhood and part of the disturbances were evidently the result of the action of the malaria on the thyroid, suprarenals, or hypophysis. The small size, the absence of virility and the infantile genitals suggest that thyroid treatment might prove useful in such cases, and he will later report experiences in this line.

Semaine Médicale, Paris

October 26, XXX, No. 43, pp. 505-516

68 *Abortion. R. De Bovis.

68. **Abortion.**—De Bovis comments on the rising tide of abortions; the number of abortions requiring treatment in the public hospitals of Paris is said to have tripled during the last few years; Treub estimates the criminal abortions as 10 per cent. of all observed in Amsterdam and others there estimate the proportion up to 33 per cent.; at Utrecht, nearly 14 per cent.; at Groningen, 24 per cent., and de Bovis cites several American authorities and others to show the increasing importance of this subject. He warns against making a local examination of a woman threatened with abortion. If absolutely compelled to make an examination, he says, the finger should never be introduced until after the external genitals have been prepared as for a vaginal hysterectomy; otherwise, he says, puerperal infection is likely to ensue sooner or later and the physician alone will be responsible for it. If there is serious hemorrhage he insists on absolute repose with the patient lying flat; quiet is indispensable; if it cannot be obtained at home the patient should be sent to a hospital. If the hemorrhage persists and the physician is morally sure of the death of the fetus, curetting is in order, but there is no hurry, de Bovis says. He has had patients with hemorrhages for a month, one for four months and one for five or six months, and yet the pregnancy progressed to the birth of a living child. On the other hand, one patient insisted on being at once curetted and she died in a few hours from uncontrollable hemorrhage. The temperature will show when the ovum has separated sufficiently. When the patient is kept in an aseptic condition, that is, without local examination or other maneuvers, and hot douches are given only in numbers sufficient to combat alarming hemorrhage, the temperature keeps within normal range. Careful watching may show a slight rise; at the same time slight hemorrhage may recur or a very slight fetid odor may be noticed in the secretions. These signs show that the fetus is dead, that the placenta has become a foreign body and that the uterus is trying to expel it. This is the time for curetting if spontaneous expulsion does not rapidly follow. At this time the operation is easy and without danger, he says. In case of primary uterine infection with temperature above 38 C., the curette should be used at once. He remarks that it is easy to order injections at 45 or 48 C. (113 or 118 F.), but that they are generally given tepid and thus only aggravate the tendency to hemorrhage. Never forget, he reiterates, that each douche should be preceded by a careful toilet of the external genitals. In regard to curetting, he advises waiting until the uterus contracts, curetting gently during the period of relaxation after a contraction, and using the largest curette possible. The point is to curette at the moment when the placenta is almost entirely separated and the uterus offers a thick and resisting wall. Perforation may well be feared when there is infection in the uterus, for then one's hand is forced and the curetting may be done while the placenta is still too firmly adherent.

Berliner klinische Wochenschrift

October 17, XLVII, No. 42, pp. 1917-1956

69 Importance of Opsonins from Practical Standpoint. G. Michaelis.
70 *Relations Between Anaphylaxis and Infection. E. Friedberger.
71 *Anaphylaxis and Internal Secretion. R. Hoffmann.
72 Cultivation of *Spirochæta Pallida*. (Erkennung des Syphiliserregers auf dem Wege der Züchtung der Spirochaete pallida.) J. Schereschewsky.
73 *Nature of Drug Eruptions. (Weitere Untersuchungen über das Wesen der Arzneiexantheme.) C. Bruck.
74 The Bacteriologic Complement. H. Liefmann and M. Stutzer.
75 *Treatment of Tuberculosis by Vaccination with Tuberculin. (Behandlung der Tuberkulose mittels Hautimpfung mit Tuberkulin.) W. Pöppelmann.
76 Disputed Points in Biology of Tubercle Bacilli. G. Deycke and H. Much.
77 Mountain Sickness. (Bergfahrten und ihre gesundheitlichen Folgen.) Grossmann.

70. **Differentiation of Albumin by Anaphylaxis Test.**—Friedberger reports research which seems to confirm his view that anaphylaxis is an extremely acute form of infection and that infection is merely a milder, more protracted form of anaphylaxis. He has succeeded in producing in animals the typical symptoms of bacterial infection by repeated injections of small amounts of alien albumen; a single large injection induces the symptoms of anaphylaxis. The most striking characteristic of the latter is the sudden drop in temperature while the most striking characteristic of bacterial infection, perhaps, is the continuous or remittent temperature, and this can be induced at will by repeated small injections of the same substance which in a single large dose induces the anaphylactic shock. He has worked out in this line a method for forensic differentiation of albumin which, he states, is constant and more sensitive than any of the tests hitherto in vogue, not excepting the deviation of complement and precipitin tests: The standards for intravenous injection of sheep serum in the guinea-pig, for instance, are 5 c.c. for the fatal dose; 0.5 c.c. for the dose inducing the drop in temperature; 0.01 the dose below which the temperature does not drop; 0.005 the dose which raises the temperature, and 0.001 c.c. the dose below which the temperature is not modified in any way. Subcutaneous injection of 0.01 c.c. of sheep serum confers anaphylaxis on the guinea-pig, so that intravenous injection two weeks later of one-thousandth of the standard doses mentioned above has the same effect as the above dosage in the unprepared animal. That is, 0.005 c.c. proves fatal; 0.0005 c.c. is the limit dose for the drop in temperature; 0.00001 c.c. the limit below which there is no drop in temperature; 0.000005 c.c. the fever-inducing dose, and 0.000001 c.c. the limit dose below which there is no change in temperature.

71. **Anaphylaxis and Internal Secretions in Connection with Hay-Fever.**—Hoffmann regards the thyroid as the accumulator for the vagus and the suprarenals for the splanchnic domain. Hyperfunctioning of the thyroid makes the vagus more irritable and thus favors the development of bronchial asthma. Hay-fever he explains as a condition of special sensitiveness to alien albumin, and thyroid hyperfunctioning is a powerful predisposing factor. Among the arguments in favor of this view are the occurrence of dermographism and urticaria in both hay-fever and exophthalmic goiter; the frequency of a tendency to goiter in hay-fever victims; the cure of all tendency to hay-fever in one of his patients, a chronic hay-fever victim, by operative removal of a goiter; the reflex conjunctival hyperemia, etc. induced in both hay-fever and hyperfunctioning of the thyroid by tickling the nasal mucosa; the resemblance between the syndrome of hay-fever and that of acute iodin poisoning, and, finally, by the similarity between the response on the part of the skin and temperature to subcutaneous injection of pollantin in hay-fever patients and of thyroidin in exophthalmic goiter. The main points in treatment of hay-fever are thus, he says, to check the functioning of the thyroid and to reduce the irritability of the nasal mucosa. Strumectomy is the most radical measure, but Roentgen-ray treatment may also prove effectual in checking thyroid hyperfunctioning. The irritability of the nasal mucosa can be combated by topical measures, by a constricting band around the neck, by injection of alcohol into the nerve or by severing the nerve, or by massage or cauterization of the

nasal mucosa or other measures. His clinical experience has been very favorable with treatment based on these principles, the guiding idea being that hay-fever—pollen disease—is due to a special susceptibility to an alien albumin contained in the pollen of certain plants, plus thyroid hyperfunctioning.

73. **Drug Eruptions as Anaphylaxis.**—Bruck states that a physician found that aphthæ developed on his lips and tongue every time and almost immediately after he took a dose of antipyrin. He consequently refrained from using this drug for sixteen years; then he took another dose of 1 gm. and immediately the old aphthous reaction developed at once. Experiments with his serum on guinea-pigs confirmed the assumption that his idiosyncrasy to antipyrin and its derivatives is an actual anaphylactic phenomenon, and that the anaphylaxis could be transmitted to animals by injection of his serum.

75. **Treatment of Tuberculosis by Inoculation of Skin with Tuberculin.**—Pöppelmann has applied the v. Pirquet technic for systematic administration of tuberculin, and lauds its numerous advantages over the more complicated usual technics *while it seems to surpass them in the mildness, constancy* and more gradual action of the tuberculin incorporated in this way. He dips the blade of the scalpel in the "old" tuberculin and spreads the droplet thus taken up on the skin of the upper arm. Then he scratches the skin with a single stroke of the scalpel, the same as for ordinary vaccination. After all subsidence of the local and general reaction, he makes another scratch, crossing the first. The third time he adds two more scratches, thus forming a double cross; the fourth time two more, forming a lattice-work of scratches, adding two each time. He gives some typical case-reports to show the simplicity and convenience of the technic and its special therapeutic advantages. It seems evident, he declares, that the skin possesses certain biologic factors which enhance the curative and tonic action of tuberculin given in this way. With this technic, he says, tuberculin treatment becomes possible in everyday routine practice.

Medizinische Klinik, Berlin

October 23, VI, No. 43, pp. 1683-1726

78 *Ehrlich's "606" in Syphilis. W. Weintraud.
79 *Cancer and Infectious Disease. (Krebs und Infektionskrankheiten.) R Schmidt.
80 Case of Disturbance in Heart Conduction. (Ueberleitungsstörung mit Vortauschung einer Umkehr der Schlagfolge.) D. v. Tabora.
81 Cardiac Neuroses. (Die sogenannte Herzneurosen.) M. Herz. Commenced in No. 42.
82 Lung Suction Mask in Treatment of Asthma. (Physikalische Behandlung des Asthma bronchiale.) E. Kuhn. Commenced in No. 42.

78. **Ehrlich's "606" in Syphilis.**—Weintraud concludes from his experience in 250 cases that syphilis is not definitely cured by a single injection of "606" and that no benefit can be anticipated from it in tabes. The syphilitic infection may injure a predisposed nervous system to such an extent that even the most thorough treatment may not prevent the development of tabetic spinal cord disease. In a few of his patients the new remedy failed to display any therapeutic action, and the Wassermann reaction persisted unmodified in many of the patients; in others, after a negative phase, it became positive again in a few weeks. The negative phase after treatment with "606," therefore, does not indicate a complete cure any more than after mercurial treatment. Recurrence was observed in fourteen out of eighty cases of recent and secondary syphilis. In only thirty-seven out of seventy-seven patients did the Wassermann reaction become permanently negative. In three cases the Wassermann reaction persisted unmodified even after a second and third injection of "606." He does not regard it as probable that the permanent results will be any better from increased dosage; in his experience intravenous infusion of the drug—which brings the whole organism under its influence more thoroughly—was not followed by a permanent cure any more than with the other technics. It seems that the body reacts as promptly and extensively to a small as to a large amount of the drug, and this reaction is the *chief aim in the treatment* of human beings, while in animals the aim is to kill all the spirochetes at one stroke. Repetition of the doses may prove effectual as with mercury. None of the symptoms in his twenty cases of tabes seemed to be influenced by the "606" but it displayed great efficacy in patients refractory or intolerant to mercury and iodid. There is grave danger, he continues, that physicians and the public will regard the problem of the cure of syphilis as too simple and as already solved. It must be reiterated that the cure of syphilis in man is a far more complicated process than the cure of experimental syphilis.

79. **Antagonism Between Infectious Diseases and Cancer.**—Schmidt has been much impressed with the fact that in 241 cases of carcinoma, ninety-nine of the patients had never had any infectious disease, either in childhood or adult life, and that forty-nine had had only one of the children's diseases and no infections later in life, and fifteen only one infectious disease in adult life. Only three of the total 241 patients had passed through two or more infectious diseases since puberty; 180 had had no children's diseases, and 140 no infectious disease in adult life. His cancer patients had thus not had *their organisms modified by infectious diseases, consequently* the conclusion is evident that the infectious processes must modify the constitutional soil in such a way as to reduce the predisposition to cancer. He suggests that modern prophylaxis of infectious diseases, steering away from the Scylla of infection is liable to strike on the Charybdis of cancer. He calls the number of infectious diseases the individual has passed through, the "infection index," and urges others to study whether this index is as strikingly low in their cancer cases as he has found it at Vienna.

Münchener medizinische Wochenschrift

October 18, LVII, No. 42, pp. 2169-2216

83 *Therapeutic Artificial Reduction of Pressure of Air in Lungs. (Die künstliche Luftdruckerniedrigung über den Lungen: eine Methode zur Forderung der Blutzirkulation.) O. Bruns.
84 The Oxidase Reactions in Frozen Sections. (Oxydasereaktionen an Gewebsschnitten.) W. H. Schultze.
85 *Durable Anesthesia of the Tuberculous Larynx by Alcohol Infiltration of the Superior Laryngeal Nerve. G. Roth.
86 *Heart Disease and Trauma. (Herzerkrankungen im Anschluss an ein Trauma.) C. Beckhaus.
87 Heart Disease as Contraindication to Administration of Ehrlich's "606. (Welche Herzerkrankungen bilden voraussichtlich eine Kontraindikation gegen die Anwendung von Ehrlich-Hata "606.") K. Grassmann.
88 Technic and Dosage of Ehrlich's "606" in Soluble Form. Dubot.
89 Ehrlich's "606" in Syphilis. K. Taege.
90 *Fatality After Injection of Ehrlich's "606" in Syphilis. E. Ehlers.
91 Technic of Intravenous Injections of Ehrlich's "606" in Children. W. Blacher.
92 Roentgen-Ray Treatment of Uterine Myomas. F. Bardachzi.
93 Irritation from Use of Iodized Benzin at Points Where Benzin Could Not Evaporate. R. Pürckhauer.
94 Importance of Disturbances in Lime Metabolism in Origin of Rachitis. (Bedeutung der Kalkstoffwechselstörungen für die Entstehung der Rhachitis.) W. Dibbelt.

83. **Stimulation of the Circulation by Differential Pressure in the Lungs.**—Bruns expatiates on the important part played by the respiration in promoting the circulation, and states that this influence can be enhanced by differential pressure procedures. The method he has found most convenient is the artificial rarefaction of the air breathed into the lungs. This he realizes by having the patient breathe freely through a mask into a large tank in which the pressure of the air has been reduced by 8 to 10 c.c. water. The respiration-rate increases by 4 and the pulse rate by 8 to the minute, while various tests reveal that the procedure induces a rapid and ample aspiration of venous blood upward. The arteries also feel the stimulating effect of the more rapid emptying of the veins and a secondary increased arterial flow toward the periphery is rendered evident by the plethysmograph. The procedure promotes the return flow of the venous blood and it is thus specially indicated, he states, in case of weakness of the heart action from impeded respiration, in heart disturbances from kyphoscoliosis, with pleuritic adhesions, emphysema with rigid thorax and atelectasic processes in the lungs. It may be indicated further in case of weak heart action in the obese *and anemic, in persons in sedentary occupations and in*

myocardial lesions from preceding overexertion The contraindications are the same as for any physical measure, advanced failing compensation with much edema aneurysm, thrombosis and impending embolism. Even with failing compensation, patients bore the application of the procedure for fifteen minutes at a time without disturbance, no vertigo, palpitation or dyspnea being observed, the relief was so pronounced that the patients asked to have the course of treatment continued

85 **Alcohol Infiltration of Nerve in Laryngeal Tuberculosis**—Roth extols the advantages of injection of alcohol to deaden the superior laryngeal nerve and thus free the patients from the pain in swallowing which torments the victims of laryngeal tuberculosis. He has applied the measure in thirty three cases and the effect was the immediate suppression of the pain in all but one case, the analgesia persisted for from one to twenty one days, averaging about a week Repetition of the injection does no harm and the patients clamor for it In one case he repeated the injection five times. the effect seems to be felt earlier and to persist longer as the injections are repeated He disinfects the skin with alcohol and mercury bichlorid, and presses the larynx toward the side of the tenderest point and introduces the needle at this point for about 1 5 cm and then twists the needle upward and outward, a sharp pain radiating to the ear shows that the nerve has been reached Then about 1 gm of 85 per cent alcohol warmed to 45 C in the water bath, is cautiously injected The typical sensitive point is easily found between the hyoid bone and the ala of the thyroid cartilage, where the internal branch of the superior laryngeal nerve pierces the thyrohyoid membrane This branch is the sensory nerve for the inside of the larynx and trachea

86 **Heart Disease Following Trauma.**—Beckhaus' experience with three cases has shown that myocarditis may develop insidiously after a fall on the left chest or contusion of this region Two of his patients were men over 50, previously healthy. The third patient was a younger man, and the heart was found apparently sound four months after the accident, the myocarditis not developing symptoms until after this interval The heart disease was much milder in the case in which the patient had been treated by a month of repose after the accident In all cases of injury affecting the left chest he says, special attention should be paid to examination of the heart and the possibility of an organic affection later should not be forgotten Otherwise the symptoms when they develop are liable to be ascribed to neurasthenia or hysteria

90 **Fatality After Injection of Ehrlich's "606"**—Ehlers injected the drug according to the Wechselmann technic The patient was a man of 40 with paralytic dementia which had considerably improved under psychiatric treatment, so that he was able to walk and read the papers and understand part of what he read He had had two apoplectiform attacks previously, one two years and one five weeks before the injection of "606" The injection was not followed by any local reaction but progressive symptoms on the part of the nervous system developed, tremor, sweating crises and weakness, and the patient died the fifth day of progressive heart weakness No cause for the fatality could be discovered at necropsy except acute parenchymatous degeneration of the organs

Therapeutische Monatshefte, Berlin

October, XXIV, No 10, pp 517 592

95 *Treatment of Fracture of the Humerus P Glaessner
96 *Cure of Splenic Anemia by Successful Treatment of Pyelocystitis (Einfluss einer chronischen Infektionskrankheit auf den Verlauf der Anemia splenica infantum) G Hartwig
97 Fractioning Dose Increases Action of Narcotics F Beinaschewitz

95 **Treatment of Fracture of the Humerus**—Glaessner gives an illustrated description of the simple and convenient plaster cast which he applies for fracture of the humerus It covers the top of the shoulder and extends over part of the chest and down to the wrist, fitting well over the chest from the axilla After a week or so the outer third of the part on the arm and shoulder is cut out lengthwise permitting massage, after which the segment is bound in place again. The results in the twenty one cases in which this cast has been applied have been satisfactory

96 **Splenic Anemia in Infants and Chronic Infectious Processes**—In the two cases reported by Hartwig, improvement or cure of a chronic pyelocystitis was followed by retrogression or cure of severe splenic anemia He has noticed also aggravation of the anemia in such cases by frequently recurring coryza and bronchitis, most of the children succumbing finally to the bronchial process

Wiener klinische Wochenschrift, Vienna

October 20 XXIII, No 42, pp 1471 1506

98 *Behavior of Esophagus with Dilatation of the Heart (Verhalten des Oesophagus bei Herzvergrosserung) F Kovacs and O Stoerk
99 Hereditary Deafness and the Laws of Its Inheritance V. Hammerschlag
100 Anaphylaxis and Hemolysin Intoxication H Pfeiffer
101 *Ehrlich's 606 in Syphilis W Pick and P Ehrlich

October 27, No 43, pp 1507 1546

102 Treatment of Supernumerary Ureters B Cristofoletti
103 *Improved Technic for Preservation of Serums and Antigens S Stokel
104 Blood Findings in Lymphogranulomatosis, Lymphosarcomatosis and Glandular Tuberculosis E Fabian
105 Nature of Wassermann Reaction H Guth
106 *Ehrlich's '606 in Syphilis R Polland, R Knauer and J. Furth

98 **The Esophagus with Enlargement of the Heart.**—Kovacs and Stoerk give a number of illustrations showing compression and extreme displacement of the esophagus liable to occur with dilatation of the heart As the compression is by a soft and yielding body, the flattening and displacement have little practical importance as there is no subjective disturbance

101 **Ehrlich's "606" in Syphilis**—Pick states that since his first publication on this subject recurrence of symptoms has been observed in some of the cases previously reported as cures He encountered six refractory patients among the 200 treated

103 **Solidified Serums and Antigens**—Stokel has found that serums and antigens will keep perfectly when mixed with sodium sulphate to bind the water One c c of immune serum mixed with from 0 7 to 1 gm. of calcined sodium sulphate is taken up and the whole solidifies and can be pulverized The total weight of the mass is from 1 7 to 2 gm and, dissolved in 100 c c of distilled water, produces an isotonic fluid, corresponding to a salt content of 0 7 to 1 per cent and a dilution of the active serum to 1 per cent His experiences have confirmed the great convenience and the reliability of this technic

106 **Ehrlich's "606" in Syphilis**—Polland and Knauer found the Wassermann reaction positive in twenty-five out of twenty eight patients after complete subsidence of all symptoms. One patient had high fever accelerated pulse and retention of urine for seven days after injection of the "606" by the old methyl alcohol technic which has since been abandoned. They encountered several refractory cases Furth calls attention to certain peculiarities in the recurring and secondary symptoms after the use of Ehrlich's remedy. It is evident, he says, that clinicians will have to make a distinction between the manifestations of syphilis after mercurial treatment and after treatment with "606" The pathology of syphilis is about to be revolutionized, he thinks, along with the prognosis

Zeitschrift fur Kinderheilkunde, Berlin

I, No 1, pp 1-138

107 Importance of Lime Salts for the Child Organism (Bedeutung der Kalksalze fur den Organismus des Kindes Auf Grund klinischer Bestimmungen des Blutkalkes nach Wright) R Neurath
108 Nature of the Physiologic Decline in Weight of New Born Infants (Wesenserklarung der physiologischen Gewichtsabnahme der Neugeborenen) F Rott
109 Absorption of Diphtheria Antitoxin (Quantitative Bestimmung des Resorptionsverlaufes subcutan eingefuhrten Diphtherieheilserums mittels intracutaner Methodik) M Karasawa and B Schick
110 Salt Fever in Infants (Zur Frage des Kochsalzfiebers beim Saugling) H Nothmann
111 Infant Mortality and the Outdoor Temperature in Winter (Sauglingssterblichkeit und Aussentemperatur in Winter) H Risel

112 The Energy Requirements of Artificially Fed Infants. (Energiebedarf künstlich genährter junger Säuglinge.) M. Calvary.
113 Graphic Representation of Factors to be Regarded in Infant Feeding. (Schematische Darstellung der Säuglingsernährung zu Unterrichtszwecken.) C. v. Pirquet.
114 The Osmotic Pressure of the Blood in Infants. (Die physikalischen Erscheinungen des Blutes beim gesunden und kranken Säugling.) B. Salge.

Zentralblatt für Chirurgie, Leipsic

October 22, XXXVII, No. 43, pp. 1393-1416

115 Transthoracal Cardiotomy for Impassable Cicatricial Stenosis of the Esophagus. H. Fischer (New York).
116 *Operation for Exstrophy of the Bladder. (Zur Operation der Blasenspalte.) F. Roloff.

October 29, No. 44, pp. 1417-1440

117 Contra-Indications for Intravenous Saline Infusion. R. Bertelsmann.
118 Management of the Colon After Resection and Suture. C. Bayer.

116. **Treatment of Exstrophy of the Bladder.**—Roloff's patient was a healthy, stout girl of 6. He cut out a segment of the bladder wall containing the mouths of the ureters, and then, through a laparotomy incision, slit the bowel at the sigmoid flexure. Twisting the segment of the bladder forward and upward, making a turn of about 180 degrees, he sutured it in the slit in the bowel. The uterus rested in the angle formed by the ureters and trigonum and was fastened here with a few sutures. The functional result was perfect from the first; the child is continent and there has been no disturbance to date. He suggests that this technic might be improved on by suturing the segment of bladder into a stretch of cecum plus some of the ileum, after exclusion of this section of the bowel, twisting the appendix around and suturing it in the rectum. Ascending infection from the bowel would be impeded by Bauhin's valve even if it could pass upward through the narrow appendix, the constant flow of urine being all the other way. The operation might be done at two sittings, the appendix being thoroughly sterilized and prepared during the interim.

Zentralblatt für Gynäkologie, Leipsic

October 29, XXXIV, No. 44, pp. 1409-1440

119 *Death of Parturient Allowed to Get Up Early After Abortion. (Ein Todesfall nach Frühaufstehen im Wochenbett.) A. Scherer.
120 Operative Treatment of Large Postoperative Ventral Hernia. S. Lindqvist.

119. **Death of Parturient Allowed to Get Up Early.**—Scherer states that he has been able to find records of only two or three fatalities from the custom of allowing parturients to get up earlier than has been the rule until within the last year or so. But he here reports a case in which the woman was allowed to get up and sit in a chair for half an hour on the third day after abortion at the third month. The temperature ran up the next day and fatal thrombosis developed in the pelvic veins. He remarks that if the patient had not left the bed so early the thrombosis might not have developed or the localization of the process might have been more favorable and the outcome better if the patient had been kept in bed longer. Among the 9,257 deliveries at the Budapest clinic, with which he is connected, thrombosis developed in only thirty-four cases, that is, in 0.36 per cent., and the outcome was fatal in only one of the two cases complicated by pulmonary embolism. On the other hand, this case of fatal thrombosis occurred in the small group of 200 parturients allowed to get up earlier than the usual rule.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 6, XXXI, No. 120, pp. 1265-1272.

121 Viscosity of Blood and the Eosinophils in Epileptics and the Insane. G. Vidoni and S. Gatti.

October 23, No. 127, pp. 1337-1352

122 Test Diets in Intestinal Disease. (Le Diete di prova per l'esame delle funzioni intestinali.) M. V. Carletti.

Policlinico, Rome

October 23, XVII, No. 43, pp. 1347-1378

123 *Early Diagnosis of Gastric Cancer. (La diagnosi precoce del cancro dello stomaco in relazione coll'intervento chirurgico.) G. Benacchio.
124 Treatment of Hypertrophy of the Prostate by Bottini's Galvano-Caustic Method. A. Rossi.

October, Surgical Section, No. 10, pp. 429-476

125 Isolated Tuberculous Focus in the Myometrium. (Tubercuosi del corpo dell'utero limitata al miometrio.) R. Alessandri.
126 Retrograde Incarceration of Intestine. (Strozzamento intes- [illegible] Passaggi.
127 [illegible] Infection. (Sulle streptotricee e [illegible] ıimali da esperimento.) F. Purpura.
128 [illegible] Scaphoid Bone. (Fratture dello scafoide del carpo.) R. Gabaglio. Commenced in No. 8.

123. **Early Diagnosis of Gastric Cancer.**—Benacchio reviews the various methods in vogue for detecting incipient gastric cancer, and adds that they mostly require special skill and experience for the technic of the tests and interpretation of the findings. Consequently the general practitioner should refer his patient to the specialists for these tests when he has the slightest suspicion that the patient may be developing gastric cancer. This is his task, and on his performance of this task depend the fate of the patient and the progress of science in this line.

Riforma Medica, Naples

October 17, XXV, No. 42, pp. 1149-1176

129 Intermittent Gastric Hypersecretion. (Gastropatie dinamiche ed organiche. VII.) G. Rummo.
130 Experimental Syphilids in the Rabbit. V. Chirivino.

Ugeskrift for Læger, Copenhagen

October 6, LXXII, No. 40, pp. 1189-1216

131 Ehrlich's "606" in Leprosy. E. Ehlers.
132 Comparative Tests of Various Methods for Bacteriologic Examination of Sputum. (Om Værdien af forskellige Homogeniserings- og Sedimenteringsmetoder til Paavisning af T. B. i Expektorat.) P. Bogason.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

BACTERIOLOGY AND SURGICAL TECHNIC FOR NURSES. By Emily M. A. Stoney, Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill. Third Edition, revised by Frederic R. Griffith, M.D. (Univ. of Penn.), Surgeon, Fellow of the New York Academy of Medicine. Cloth. Price, $1.50 net. Pp. 311, with 204 illustrations. Philadelphia: W. B. Saunders Co., 1910.

ATLAS UND GRUNDRISS DER VERBANDLEHRE FÜR STUDIERENDE UND AERZTE. Von Dr. Albert Hoffa, a. o. Professor an der Universität, Berlin. Nach des Verfassers Tod bearbeitet von Privatdozent Dr. Rudolf Grashey, München, Lehmann's Medizinische Handatlanten. Band XIII. Fourth Edition. Cloth. Price, 10 marks. Pp. 152, with 170 illustrations. München: J. F. Lehmanns Verlag, 1910.

PROCEEDINGS OF THE TWENTY-EIGHTH ANNUAL MEETING OF THE MARYLAND PHARMACEUTICAL ASSOCIATION. Baltimore, June 16 to 19, 1910. Together with the Code of Ethics, Constitution and By-Laws, List of Officers and Members, etc. Paper. Pp. 252. E. F. Kelly, Secretary, 303 W. Pratt Street, Baltimore.

TREATISE ON DISEASES OF THE SKIN. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Professor of Dermatology in the Jefferson Medical College, Phil. Sixth Edition. Cloth. Price, $6 net. Pp. 1195, with 323 illustrations. Philadelphia: W. B. Saunders Co., 1910.

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D., Professor [illegible] ersity of Chicago and in Rush Medical [illegible] Cloth. Price, $3 net. Pp. 594, with 162 [illegible]: W. B. Saunders Co., 1910.

THE REFRACTIVE AND MOTOR MECHANISM OF THE EYE. By William N. Souter, M.D., Associate Ophthalmologist, Episcopal Eye, Ear and Throat Hospital, Washington, D. C. Cloth. Price, $2. Pp. 347, with 148 illustrations. Philadelphia: The Keystone Publishing Co., 1910.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. By R. H. Aders Plimmer, D.Sc., Assistant Professor of Physiological Chemistry, University College, London. Cloth. Price, $1.80. Pp. 270, with 49 illustrations. New York: Longmans, Green & Co., 1910.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Authors and Subjects. Second Series. Vol. XV. S.—Skin Grafting. Cloth. Pp. 777. Washington: Government Printing Office, 1910.

INSANITY IN EVERY-DAY PRACTICE. By E. G. Younger, M.D. Brux, Senior Physician, Finsbury Dispensary. Second Edition. Cloth. Price, $1.25. Pp. 124. Chicago: Chicago Medical Book Co., 1910.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY FOR 1911. New Revised Edition. Leather. Price, $1.50. Sixty Patients per Week. New York: William Wood & Co. (1910).

HISTORY OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA. 1817-1909. Cloth. Price, $3. Pp. 499, with illustrations. Washington: Medical Society of District of Columbia, 1909.

THE PRACTITIONER'S VISITING-LIST FOR 1911. Leather. Price, $1.25. Pp. 192. Thirty Patients per Week. Philadelphia: Lea & Febiger, 1910.

THE JOHN CRERAR LIBRARY HANDBOOK, 1910. Paper. Pp 16. Chicago: John Crerar Library, 1910.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

VOL. LV, NO. 23 CHICAGO, ILLINOIS DECEMBER 3, 1910

THE ETIOLOGY OF THE PTOSES AND THEIR RELATION TO NEURASTHENIA*

EDWARD REYNOLDS, M.D.
BOSTON

The application of surgical treatment to neurasthenia implies a belief that in the given case the nervous condition is the product of local suffering; and the attainment of the ultimate object of course implies the complete relief of the local suffering as the first step in the process of cure. It therefore seems logical that any discussion of the surgical aspects of neurasthenia should begin by consideration of the results which may be expected from the relief of the local symptomatology.

In this particular subject of the connection between the ptoses and neurasthenia we are met at the outset by the significant fact that after many years of collective experience in the surgical treatment of the ptoses, the discussion about the end results of operation is almost as active and as much a moot question as it was ten years ago.

It is further significant that a review of the literature of this subject during the past ten years shows at once that the controversy on it has been conducted almost without exception along the lines of advocacy of differing technical methods, with an almost entire neglect of any apparent interest in the cause of the lesions.

Now the whole history of surgical progress shows that the long persistence of such a technical question without satisfactory settlement always implies an unsettled pathology or etiology, and that such a technical controversy is usually brought to an end only by some advance in our theoretical knowledge of the cause of the lesions, after which the decision about methods is usually prompt and easy. Thus the selection of the etiology of the ptoses as the subject of the opening paper in this discussion has the double justification that it is at once the line of discussion which promises the most far-reaching results, and that which has been least worked out.

The first and most important point in the etiology of the ptoses is almost axiomatic. It needs no argument to show that they are never primary lesions, but are always secondary to some preexistent mechanical cause, either (a) in the failure of the natural supports of the organ, or (b) in the existence of some abnormal force antagonistic to the efforts of supports of normal strength. These two classes of cause now demand our further consideration.

The ptoses due to weakness of the supporting structures are far the best understood and may be considered first. Ptoses due solely to such weakness are, however, far less comon than has been generally understood.

Much that has been written in the past on the subject of ptosis would lead one to believe that a spontaneous relaxation of the supports of some one organ was a common phenomenon. So far as my observations go they tend to show that this is an erroneous view and that the muscular relaxations are always general in their character. Cases which appear to be due to localized relaxation of the supports of a single organ will always prove on closer analysis to be due to an abnormal force which is pushing or pulling that organ out of position and which has overcome the tonicity of its natural supports.

The importance of general, constitutional, muscular relaxation, and loss of fat in the production of generalized ptosis is well understood; but so important a fact as this must not be lightly passed over.

It is, moreover, important to realize here that rapid loss of fat is by all odds the most important element in the causation of the class of cases in which the ptosis is the result purely of passive lengthening of the normal supports. The tissues in these relaxed cases have usually been previously stretched by the deposition of fat within them, and if this is suddenly lost lengthening of the so-called ligaments is inevitable.

In treatment it is most essential to recognize that in *this class of cases operative treatment is almost never* indicated. We must treat them in accordance with their causation. They will usually obtain relief under treatment directed toward the improvement of general muscular tone and increase of nutrition, and will never obtain satisfactory relief without such general improvement. Operative treatment should be adopted only in the very few instances in which the local symptoms which are the product of the ptosis so far interfere with digestion as to render it difficult to secure proper nutrition without it, and even then it must be remembered that subsequent improvement in nutrition and muscular tonicity is the ultimate object of the operation, and that every therapeutic device at our command should be directed toward its attainment.

The causation and management of ptoses of this first class is, however, generally well understood, and belongs to the domain of accepted surgical principles, but the theorem that there are many cases of ptosis which are primarily due to the existence of forces which are antagonistic to the normal supports of the viscera has only recently attracted attention. I believe that many, if not most, of our failures in the operative treatment of ptosis occur in cases of this second class, and are due to adoption of routine operative measures without previous investigation of the cause of the individual ptosis, and often in defiance of continuing forces which directly dispose to its reproduction. The discussion of these predisposing or directly causative anomalies, and of the surgical measures appropriate to their correction, forms, then, my main theme.

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* The opening paper in a discussion on "The End Results of Operations for Ptosis" at a combined meeting of the American Surgical and American Gynecological Associations.

The forces which tend to produce ptosis may be of either local or general origin, and must be considered in detail, those of systemic origin and influence naturally coming first.

GENERAL STATIC FORCES

During the last four or five years my attention has been especially directed to a study of the influence of general static or mechanical conditions on the positions of the abdominal and intrapelvic organs, and much of my time has been given to a prolonged experimental, and, of late, clinical study of this subject in collaboration with Dr. R. W. Lovett. Our experimental studies as bearing on the relation between balance in the erect posture, backache, and the intrapelvic lesions, have been recently published,[1] to which paper I must refer in support of many of the statements which I shall make here. During the past year clinical papers bearing on the same subject as connected with ptosis have been published by several widely separated observers.[2] Dr. Lovett and I are now actively engaged in the collection of cases and the tabulation of symptoms and conditions for the purpose of studying these states from a clinical standpoint, but, significant as we think that this study is proving in everyday clinical work, the number of cases which we have observed with accuracy is not yet sufficient for the publication of exact results. I must be content here with a merely preliminary, and I hope suggestive, outline statement of a few of the main facts which we have observed.

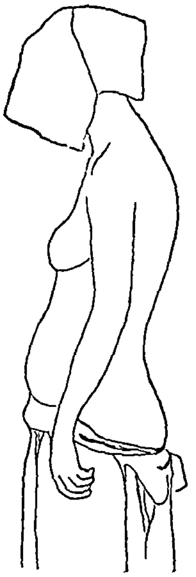

Fig. 1

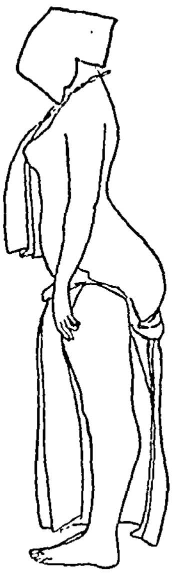

Fig. 2.

Fig. 1.—The round-shouldered, hollow-backed position. An outline reproduction of a photograph from life. Not an extreme example.

Fig. 2.—The overfeminine figure. An outline reproduction of a photograph from life. Not an extreme example.

The variations which we have grown to think important are partly functional and partly congenital, or compubertal variations of skeletal form. First and perhaps most important among them is the attitude known to orthopedic surgeons as the round-shouldered, hollow-backed position illustrated in Figure 1. In this attitude the center of gravity is carried too far forward for easy maintenance of balance, and the capacity of the upper part of the abdomen is decreased by the forward droop of the upper dorsal spine and the descent of the ribs, while the relaxation of the anterior abdominal wall produced by the approximation of the ensiform cartilage to the pubes permits the formation of a pot-belly, with consequent increase in the capacity of the lower abdomen. During the gradual supervention of this abnormal attitude the contents of the upper abdomen necessarily tend to rearrange themselves downward in adjustment to the altering pressures, while the unduly forward position of the lumbar vertebræ, from the anterior face of which the intestines depend, leads to the impaction of their dependent coils against the anterior wall of the abdomen and pelvic cavity.

In the normal attitudes the impact of the intestines is directed against the posterior surface of the uterus and tends to hold it forward, but when, as in this attitude, the intestines necessarily slip into and out of the pelvis along its anterior wall they must sooner or later enter the uterovesical pouch during descent, and so force the uterus and its adnexa backward.[3]

This attitude is present in a surprisingly large fraction of all ptoses, and is causative toward the ptoses of all the viscera; since I have been led to look for it I have become shocked and ashamed at the blindness which has led to my utter failure to even see so noticeable a phenomenon during all the previous years in which I have been dealing with them. I think that this will be the experience of any operator who has not been previously impressed with the importance of this attitude.

If in such a case an operation for the relief of a ptosis of any one of the viscera is performed without correction of the vicious attitude the persistence of the latter and its consequences is of necessity a continuous force against the permanent endurance of the result. This posture is probably the product of a functional loss of correct balance and is due to factors the relative importance of which we are as yet unable to isolate with certainty.

The second abnormal posture of which we feel able to speak with some certainty is a developmental variation which has been heretofore neglected, but which we have ventured to describe as the overfeminine figure, and which is illustrated in Figures 2 and 3. These women have more or less overextended knees, large hips, hollow backs, and usually somewhat small waists and prominent busts. They are apt to become fat and to have noticeably small hands and feet. Their center of gravity is habitually carried too far forward. In them the inclined position of the anterior abdominal wall and the forward inclination of the lumbar spine tend again to impact of the intestines against the anterior pelvic wall, and consequently to displacement of the uterus. We have not, however, seen reason to think that this posture is often associated with the ptosis of the upper abdominal viscera, except when these are due to the dependent drag of a pendulous abdomen, which is, however, certainly an especially common accompaniment of this figure in middle life.[4]

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[1] Reynolds, Edward, and Lovett, Robert W.: An Experimental Study of Certain Phases of Chronic Backache. The Journal A. M. A., March 26, 1910, p. 1033.

[2] Mosher, E. M.: Habits of Posture a Cause of Deformity and Displacement of the Uterus, Woman's Med. Jour., December, 1909.
Lane, W. A.: Civilization in Relation to the Abdominal Viscera, with Remarks on the Corset, Lancet, London, Nov. 13, 1909.
Fish, Cecil E.: A Summary of Several Other Papers Referred to as the Heather Bigg Controversy, Lancet, London, Feb. 5, 1910, p. 397.
Albu, A.: Visceral Ptosis a Constitutional Anomaly, Berl. klin. Wchnschr., xlvi, No. 7, p. 285.
Landau, L.: Visceral Ptosis (Zur Lehre von der Splanchnoptose), Berl. klin. Wchnschr., xlvi, No. 7, p. 285.
Goldthwait, Joel E.: The Relations of Posture to Human Efficiency and the Influence of Poise on the Support and Function of the Viscera, Boston Med. and Surg. Jour., Dec. 9, 1909.
The following papers are also of interest in this connection:
Lange, Fritz: Schule und Korsett, München. Separatabdruck aus der München. med. Wchnschr., Nos. 13 and 14, 1906.
Klapp, Rudolf; Der Erwerb der aufrechten Köpferhaltung und seine Bedeutung für die Entstehung orthogenetischer Erkrankungen, München. med. Wchnschr., Nos. 11 und 12, 1910.
Kossman: Allgemeine Gynecologie, Berlin, Hirschwald, 1903.
Stratz: Die Schönheit des weiblichen Körpers, Stuttgart, Ende, 1899.
Stratz: Der Körper des Kindes, Stuttgart, Ende, 1909.

[3] It has long been recognized that the intra-abdominal pressures correspond closely to hydrostatic laws owing to the nearly equal specific gravity of all the contents; but upon this very basis it is evident that intestinal coils which contain gas will tend to rise, and thereby displace downward those which contain fluid, hence the constant change in position of individual portions of the intestines during peristalsis.

We have worked so long on this subject that we are very anxious to put forth no statements which are not likely to be substantiated by further observations. We do already feel confident that the two variations of posture illustrated are of real importance in their relations to the ptoses, and that their habitual correction will lead to a higher degree of success in the operative treatment of ptosis than is possible without it. We have seen such correction of attitude lead to the relief of symptoms in cases which had previously been operative failures, and we have seen it yield both anatomic and symptomatic success without operation, in cases which we should formerly have considered operative.

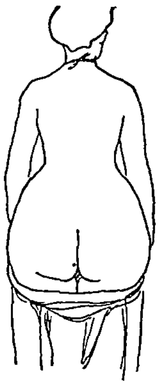

Fig. 3.

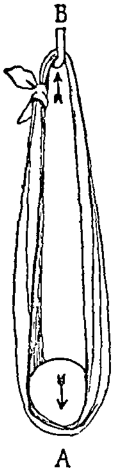

Fig. 4.

Fig. 3.—Dorsal view of subject shown in Figure 2. Note size of lumbosacral as contrasted with dorsal region. This variety of figure is a developmental exaggeration, and not radically alterable, though its consequences may be relieved.

Fig. 4.—Diagrammatic representation of a weight suspended by a sling.

Much curious information is also coming to hand on the relation of the lateral inequalities and distortions, such as lateral curvatures produced by short leg or unequal pelvis, *e. g.*, to the disturbances of anteroposterior balance, and to the production of unequal abdominal strains and ptoses; but, although we are frequently obtaining clinical relief in otherwise obstinate intrapelvic and upper abdominal conditions by associated treatment of these distortions, all this is also too little worked out to be fit for more than the merest mention here.

Both of the attitudes illustrated are largely correctible. Their treatment lies in (a) gymnastic exercises, graduated outdoor exercises, improvement of nutrition and similar methods; (b) in mechanical aids to balance and posture. The first class of treatment I shall not enter into, because, important and all-essential as it is, its methods are well established and I have nothing new to offer on it, but on the mechanical therapeutics of the trunk our experimental work has thrown some light which we think has been borne out by our clinical experience.

We believe that not only in the functional backaches, but also in the ptoses the essential factor in mechanical treatment is the rectification of the incorrect posture which is so constantly a factor, and apparently a determining factor, in their causation, and which is itself always dependent on an abnormal position of the center of gravity. Our experimental work has shown that this abnormality can be corrected by appliances far more simple and comfortable to the patient than many which are in use, and our clinical experience leads us to believe that equally good results are attained thereby.

The subjects of ptosis are almost invariably neurasthenic, and we believe most emphatically that in their treatment by mechanical appliances the first and prime necessity is that the apparatus used should be comfortable. The surgeon who fixes attention on a local condition and subjects a neurasthenic who is annoyed by a ptosis to prolonged and continuous discomfort from straps and steels does harm rather than good. He too often substitutes a greater discomfort for the lesser one which he is attempting to relieve. The great advantage which the therapeutic corset has over the complicated harnesses so often employed is that it can be made, and should always be made, a distinct comfort to the patient from the moment it is applied. It may be said of the corset, as it has long been said of the pessary, that if it is not comfortable it is not efficient, and with almost equal truth, that if it is not comfortable it is doing harm.

Extreme cases may demand extreme treatment, but we believe that a corset properly contrived to support the lower abdomen is for most cases the simplest, least harmful and most generally effective appliance, especially if it is backed up by proper shoes.

It is certainly true in my experience with nephroptosis that corsets, belts and pads adapted to make direct pressure on or below the prolapsed kidney have proved far less effective than those which are fitted to restore the normal direction to the general intra-abdominal pressure, both by properly directed compression and by restoration of balance.

Lack of space forbids me from entering fully into mechanical therapeutics here, but a few words descriptive of the mechanism by which the therapeutic corset chiefly corrects attitude may be of interest. As has been said, the leading general characteristic of all these attitudes is the carriage of the center of gravity of the body too far forward, with backward displacement of the buttocks and forward displacement of the upper part of the trunk. We have been able to demonstrate experimentally that the use of high-heeled shoes tends to sway the body as a whole backward from the ankle; also that certain forms of corsets, as well as other forms of apparatus, to which we have only referred incidentally in our publications, tend to bring the buttocks forward and the shoulders back, and this latter movement is effected by a mechanical principle which is also perhaps of sufficient interest to be mentioned here.

It is a general rule in mechanics that the action of opposing forces at rest is always opposite and equal, so that the downward pressure on the lower *end of a sling*

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[4] It is important to distinguish between the rotundity due to increased fat with increased abdominal pressure, and the protuberance due to true relaxation of the abdominal walls with decreased or even negative intra-abdominal pressure.

(Fig. 4, A) in which a weight is suspended is of necessity exactly equal to the traction on the upper end of the sling (Fig. 4, B); thus, if the weight of the pendulous abdomen is suspended by a belt or therapeutic corset which obtains its bearing from the posterior surface of the sacrum, that weight may be regarded as having been transferred from the anterior to the posterior side of the lower portion of the trunk. It is, in fact, mechanically equivalent to a weight placed on the sacral region: but if a weight is so placed on any portion of the posterior surface of the body it carries the center of gravity of the whole mass so far backward that the model must either fall backward or readjust the center of gravity;[5] and if the weight is placed on the sacrum the necessary change is, in fact, effected by carrying the hips forward.

If, however, the hips were carried forward without alteration of the position of the trunk the center of gravity would at once be carried so far to the front that the subject would fall on her face; hence the forward motion of the hips superinduced by the weight on the sacrum is of necessity complemented by a backward motion of the shoulders. In practice as well as in theory the first among the many effects of the therapeutic corset is a readjustment of posture by moving the hips forward and the shoulders back, *i. e.*, the assumption of an erect posture. It is to be noted, too, that this straightening of the dorsal spine and squaring of the shoulders with consequent elevation of the ribs and expansion of the chest is effected by the patient's own muscles under the influence of an instinctive effort toward the maintenance of balance. It is an active and natural return to a desirable attitude under the influence of the change in the abdominal pressures and in the position of the center of gravity. As such it is therapeutically far more desirable than the enforced and passive assumption of the same attitude in opposition to the natural instincts which is produced by shoulder-straps and rigid back-braces.

One word of caution must be inserted. We have learned by experience, and considerably to our surprise, that the change of dorsal attitude so induced may easily be made so extreme as to cause new dorsal and cervical aches if it is pushed too rapidly. The first corset should not be so cut or adjusted as to produce all the effect that is ultimately to be desired. A moderate change of attitude is all that is at first permissible, and adjustment to this new position should be effected by graduated exercises before more is attempted.

Another great advantage of the therapeutic corset as a mechanical corrective is that, if properly made, it restricts the motion of the body above the waist exceedingly little and permits free play to the dorsal and scapular muscles throughout the patient's day.

In conclusion of this section I may say that no one can appreciate more fully than Dr. Lovett and I the elementary character of all that we are as yet ready to say on this subject, but we believe that our experiments and observations have already gone far enough to warrant our belief in the importance of posture in this as well as in some other relations; moreover, this belief is supported by the publications already alluded to. In practice, too, we are obtaining so much satisfaction that we feel confident of the importance of this subject. Many ptoses are dependent, as is yet to be said, on conditions which can be remedied only by operation; many chronic backaches also are dependent on anatomic lesions which can be treated radically only by operation, but the great majority of both affections have a general static element in their etiology and demand its recognition in their treatment. In especial we may say that there are but few chronic backaches which cannot be remedied if both elements in their etiology are taken into consideration.

The abdominal surgeon must learn that in a large proportion of cases of the nature under consideration he must utilize the aid of mechanical and gymnastic therapy if he wishes complete results. The orthopedic surgeon also must learn that ptoses and backaches are by no means universally of purely static origin, and that whenever a case of this nature fails to react promptly to mechanical and gymnastic treatment an examination of the abdominal and intrapelvic organs should precede all further orthopedic effort. In many of these cases the two specialists must work together if really satisfactory results are to be attained.

LOCAL ABNORMALITIES

The static abnormalities are general in their action and may effect the relations of any or all of the abdominal viscera. The local causes of ptosis, now to be spoken of, are, on the contrary, individual to each organ. They are probably of equal importance throughout the abdomen, but in treating of them I propose to restrict myself here to the local causes of the intrapelvic ptoses only, since it is in that portion of the abdomen that these local causes are most easily worked out, and on the local causes of the ptoses of the upper abdomen I am not yet ready to speak.

The local causes of the pelvic ptoses are to be found in the inflammatory lesions, trauma, and some developmental anomalies, each of which with its treatment must now be taken up by itself.[6]

In this connection it is well to remember that the retrodisplacements are in themselves ptoses and are, moreover, no more than the first stage in complete ptosis of the genital organs. For the purposes of this paper, then, all the displacements of the uterus and its adnexa may be fairly considered as a single group of essentially similar lesions which can be dealt with here as a whole; and for economy of space they will be so treated.

In the pelvic ptoses due to obstetric trauma and inflammatory diseases the static predispositions are again of some importance, and at the risk of repetition I must again briefly refer to them here.

The operative treatment of the ptoses due to obstetric trauma is mainly concerned with the repair of lacerations, but it is well recognized that extensive obstetric trauma is sometimes followed by curiously little loss of support, while in other cases extremely slight solutions of continuity are followed by displacement, descensus, or perhaps by complete prolapse, and the explanations offered for these differences in result have not been heretofore wholly satisfactory. I believe that a valid explanation of them is now to be found in the existence, or nonexistence, of the predisposing causes in the individual anatomy. I believe, too, that the search for these causes is all important in the treatment of these cases also, and that their correction will often contribute most satisfactorily to the avoidance of the failures which still too often follow on an operation for prolapse.

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[5] For suggestions leading to the elaboration of this and many other mechanical points we gladly acknowledge our indebtedness to personal communications from Dr. Ansel G. Cook of Hartford whose instinctive appreciation of the problems of balance is well known to the orthopedic portion of the profession.

[6] Consideration of the ptoses due to the weight of new growths will be omitted here.

Perhaps the most prominent of all the local causes of the pelvic ptoses are the infections of the Fallopian tubes. It is universally recognized that adherent tubes drag the uterus backward and that the separation of the adhesions is the first step in the operation in these cases; the methods which should be adopted for the remainder of the operation constitute the only point in question. I believe that here we must rest on the original cause. When the history and physical examination warrant the belief that the occurrence of an infection in previously wholly normal organs was the only source of a displacement, the separation of the adhesions is a complete removal of the cause, and the operation which best holds the tubes away from the posterior peritoneum is the operation of choice. On the other hand, it must not be forgotten that the displaced genital organs are especially prone to inflammation and adhesions from slight causes, and that ptosis of the uterus and its adnexa, originally simple and the product of other local or general causes, may in time become complicated by inflammatory conditions which overshadow the original causes. In these cases the method of treatment adopted after the separation of adhesions should depend on the original cause of the lesion, whatever that may have been, precisely as in uncomplicated retroversions.

The developmental anomalies are of the utmost importance, since there can be little doubt that the whole subject of ptosis is closely related to that of general underdevelopment and should always be studied in that light. In the absence of the evidence of general underdevelopment the local anomalies are, however, ordinarily in themselves a sufficient explanation for the ptoses, and indicate at most only some modification of the ordinary operative treatment.

Among those developmental anomalies which are efficient local causes of uterine displacement, or ptosis, limited space prevents my mentioning more than the three which I have most frequently seen.

Normally the vagina and rectum separate somewhat below the level of the posterior cul-de-sac: exceptionally they are attached to each other throughout the whole length of the vagina, and even up to its actual attachment on the posterior surface of the uterus. In this anatomic condition the effort of emptying an overloaded rectum necessarily forces the uterus backward and downward, and if this condition is allowed to persist it will almost certainly militate against a good result from operation. It is not an extremely common anomaly, but I have seen it effective in a number of instances, and the possibility of its existence is well worth the momentary inspection which will detect it. If it is found, the separation of the rectum from the upper part of the vagina is easily effected, and should then be rendered permanent by a transverse suture of the incision. This small addition to the operation will in such cases make the whole difference between success and failure; without it the contest between the new mechanical conditions which were brought into being by the operation and the still existent abnormal rectal attachment, which drags the organ backward and downward, is likely to result either in the loss of the anatomic results of operation or, if they persist, in the production of a new pain.[7]

A not infrequent and a very important anomaly which has not attracted so much attention as it should is the persistence into adult life of one of the so-called ileolumbar ligaments which are normally present in the fetus. These structures represent ontogenetically the primitive support of the genital organs, but have disappeared normally in the adult human female. It will be remembered that during fetal life the ovary, like the testicle, descends from its original position in the forward part of the celom to its final position in the pelvis, while at the same time the kidney moves in the reverse direction. These movements are bilateral, but on the right side of the abdomen they are complicated by the descent of the cecum and ileum. They are accompanied and probably facilitated by the development on each side of longitudinal folds of peritoneum containing freely developed smooth muscular fiber which have been described by numerous anatomists[8] under several names (*e. g.*, ileolumbar, lumbo-ovarian, ileo-ovarian, appendiculo-ovarian ligaments).

During a portion of fetal life these ligaments are strong and well-marked longitudinal structures which draw the fundus upward and backward in opposition to the as yet little-developed round ligaments. With the progress of development they relax and permit the formation of the transverse broad ligaments. Eventually the ligament of the left side entirely disappears, while a portion of its fellow on the right side persists permanently. This structure is well known as a fold of peritoneum which originates sometimes in the mesentery of the appendix, sometimes in the mesentery of the ileum, sometimes in both, and from there runs downward to be lost in the general peritoneum at the brim of the pelvis. It has been recommended as a guide to the appendix.

I know of no instance in which the ileolumbar ligament of the left side has been found persistent, but I have seen numerous instances of its total or partial persistence on the right side. It then forms a band, which with its continuation, the utero-ovarian ligament, connects the right cornu with the peritoneum in the neighborhood of the ileocecal valve. When fully persistent it holds the uterus in forced retroversion; this condition is, however, probably rare, I have seen but one instance of it, but its partial persistence is not uncommon. It is then easily overlooked unless the uterus is drawn strongly forward with the intent of searching for it, when it springs into prominence. If it is not detected this effect will of course be produced as soon as the uterus is drawn into anteversion by any operative procedure. It then forms a retro-uterine guy on which the weight of the intestinal coils must necessarily rest when the patient reassumes the erect posture, and persists as a strong element against the success of the operation. My experience, which now covers thirteen years of observation, leads me to believe it a not uncommon anomaly.

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[7] In this connection note also the recent development of intra-abdominal operations directed against the tissues immediately behind the cervix.

[8] Graves, William P.: Incomplete Descent of the Ovary and Persistence of the Lumbo-ovarian Ligament as a Cause of Retro-Deviation of the Uterus, Bull. of the Free Hospital for Women, March, 1903, 1, No. 1.

Durand: Le ligament ileo-ovarien (Appendiculo-ovarien de Clado); Contribution a l'étude du ligament large.

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Hasse:, C: Beobachtungen über die Lage der Eingeweide im weiblichen Beckeneingange, Arch. f. Gynäk., 1875, viii, 402.

Küstner, O.: Lage und Bewegungs-Anomalien des Uterus, In Veit's Handbuch der Gynäkologie, Wiesbaden, 1897, i, 63.

Poirier: Lymphatiques des organes génitaux de la femme, 1889.

Rouget, C.: Recherches sur les organes érectiles de la femme et sur l'appareil musculaire tubo-ovarien, dans leurs rapports avec l'ovulation et la menstruation, Jour. de physiol., Paris, 1858, ix, 320.

Schultze, B. S.: Zur Kenntniss von der Lage der Eingeweide im weiblichen Becken., Arch. f. Gynäk., 1876, x, 262.

Vallin, Paul: Situation et prolapsus des ovaires, Paris, 1887.

I have also seen some reason to suspect that this anomaly may sometimes be responsible for a ptosis of the kidney, a view which its embryologic significance would tend to support. I have once seen it responsible for a displacement of a portion of the ileum.

If this ligament is found it should be divided and the cut edges of the peritoneum whipped over before any form of suspensory operation is done, care being taken that the division is sufficiently extensive to lead to full relaxation.

Perhaps the most important of all the developmental anomalies is, however, the condition known as anteflexion of the cervix. This lesion, though familiar to every gynecologist, has, I think, not been generally recognized as a cause of retroversion. It is, in point of fact, a developmental failure, a partial persistence of an infantile condition, in which the cervix is held forward by a congenitally short anterior vaginal wall and similarly shortened uterovesical ligaments; but since the cervix is much the most firmly suspended portion of the uterus, a forward fixation of the cervix necessarily tends to a backward position of the body. That the forward position of the fundus which is originally characteristic of anteflexion of the cervix is not, as is usually believed, necessarily due to an organic curvature of the body, is shown by the fact that forward fixation of the cervix is present in an extremely large proportion of all straight retroversions of the uterus, and that in each of these the reposition of the body by operation only restores the overbent condition from which the organ had escaped by straightening out into retroversion. Dysmenorrhea which has been recovered from is often reestablished by such operations.

Lack of space forbids my entering at length into this subject, but my own experience in observation of it has been so conclusive, and already so extensive, that I am confident that any observer who will trouble himself to watch for this condition in his cases of retroversion will become convinced of its importance. Indeed, one has only to watch the effect of temporary anesthesia on uncomplicated cases of anteflexion of the cervix to find that under the muscular relaxation so induced the fundus commonly falls backward, to be drawn forward again when muscular tone returns. It can then hardly fail to be a constant influence towards retroversion.

The condition is easily remedied by a transverse division of all the tissues in front of the cervix. The vaginal wall should be divided transversely with the knife just anterior to its junction with the cervix, the bladder should then be separated from the supravaginal cervix by blunt dissection with the finger, and the tissues on either side of the cervix and anterior to the broad ligaments should be somewhat widely separated by the same blunt dissection. The only bleeding will be from the cut edges of the vaginal wall and will be entirely controlled by the suture, which should be inserted transversely and for elongation of the vaginal wall. The deeper tissues need no attention. The adoption of this simple procedure as a preliminary to the abdominal treatment of retroversion in these cases has much improved my own end results, and I feel sure that this point is an important one.

I believe that the developmental anomalies of the viscera of the upper abdomen form a point well worthy of further study in connection with their ptoses.

In conclusion of my treatment of this first question, *i. e.*, of the local end results of operation, I must permit myself to say that I cannot help feeling, more and more clearly, with each succeeding year of the five which I have now devoted to the pursuit of this subject, that the careful study of the etiology of each case of ptosis promises in the end to clear up much of the confusion which has so long surrounded and still shrouds this question, and to lead to the intelligent adaptation of the form of operation chosen to the needs of the individual case; also that I am becoming persuaded that the detection and correction of auxiliary or predisposing causes before operation is undertaken, and their reasonably continued treatment after operation has been performed is even by itself of far more importance to both anatomic and therapeutic success than the exact form of operation which is selected.

The answer to the second question proposed to us—the effect of operations for ptosis in neurasthenics on the neurasthenia itself—seems to me to depend, first, on a definition, and, second, on another etiologic point.

The term "neurasthenia" is, like the term "rheumatism," one which covers so many different states as to have no satisfactory meaning in modern medicine. The mere definition of this term has in fact provoked in the last ten years a large neurologic literature of its own. It is therefore all important that any discussion on this subject should start with a definition of what is to be talked about.

I take it that as surgeons we are not concerned with the subtleties of neurologic classifications and that in using this loose and popular term we understand merely a state of low resistance to the depressing influences of the environment, irrespective of the cause to which this low resistance may be due. If this is what we mean, it follows as a logical necessity that our operations will improve the neurasthenic state in those cases in which the lessened resistance is due to the lesions on which we operate, and in no others. An attempt to relieve neurasthenia of psychologic origin by surgical operations on local lesions will invariably make the abnormal psychologic state worse. Self-evident as this may appear, it is a general principle which is too often forgotten.

From a practical standpoint it has seemed to me that the crucial test of whether the state of lessened resistance which we call neurasthenia is, or is not, dependent on the effects of local lesions lies in a careful study of the chronologic relations between the local and general symptomatology. If the neurasthenia has been pronounced and prolonged before local suffering appeared the patients will seldom be benefited by operation. If, however, prolonged suffering of local origin has preceded the advent of the neurasthenia, complete relief of the local suffering will usually result in general systemic improvement, and in increased power of resistance to the general wear and tear of life.

Two general principles must, however, be always borne in mind: First, even in these cases the only way in which the operation can benefit the neurasthenia itself is by resulting in a permanent relief of local suffering; for this reason no operation should be undertaken until the surgeon has convinced himself by close study that the local suffering is directly dependent on the local lesion and will be relieved by its repair. Second, in neurasthenics an operation which does not definitely and permanently relieve the local symptoms invariably increases the neurasthenia.

It must be remembered also that in all those cases with which we as surgeons can properly deal, the state of lessened resistance to the wear and tear of life which we call neurasthenia is always the product of an excess of physiologic expenditure over and above physiologic income, and that even if this excess of expenditure be in part the result of local suffering, we can expect no satisfactory result from operation in patients who are so situated that their expenditure under the ordinary fatigue of life is, and must remain, in excess of their powers. In such cases the results of operation will be unsatisfactory unless the conditions of the patient's life can be so far altered that the vital expenditure after operation will be less than the patient's intrinsic vital income. I believe, then, that the attainment of satisfactory end effects on the neurasthenic state itself depends, first and primarily, on the selection for operation of cases in which the neurasthenia is the result of local suffering due to local lesions, and the exclusion from operation of all other cases; secondly, on the termination of local suffering by successful end results in the operation itself, and, thirdly, on successful regulation of the patient's life after operation, either by the surgeon himself or by an intelligent medical attendant.

The too frequent failures which we have all seen are usually the result of operating in the wrong cases; and, on the other hand, much injustice is undoubtedly done to many individuals who are subjected to what is generally regarded as the reproof of nervous invalidism when in reality their suffering is real, and derived from some remediable localized cause. Were we sufficiently wise in our selection of cases there would be few more satisfactory end results than those which we should attain in the treatment of the neurasthenic state itself by operation.

321 Dartmouth Street.

RELATION OF RECRUITING TO PREVENTIVE MEDICINE *

W. H. RENNIE, M.D.
WASHINGTON, D. C.

That old and trite saying that "the efficiency of an army or navy depends on the soundness of the health of the individuals composing it," was equally true in the past as in the present, when the study of preventive medicine is so much to the fore. To-day there is a deeper appreciation of the reality of this fact, and consequently the work of recruiting has assumed the serious rôle to which it is entitled.

"Since the most important factor in the efficiency of an army is its health, it follows that everything which may influence this in any way for the better or worse should be looked after with the utmost care. The men who compose an army are drawn from civil life, in which each individual has, to a greater or lesser extent, independent control of his time, choice of occupation, selection of food and dwelling-place, and general sanitary care. After enlistment, soldiers lose most of this independence; they are housed, clothed, fed and exercised under regulations which it is beyond their power to amend; they are moved from one point to another, differing perhaps very widely in climatic and other conditions, under orders which they may not presume to question; their hours for sleep, meals, work, and recreation are fixed for them without consultation with them, and without regard to individual or communal preference."[1] This applies with equal force to men-o'war's men.

The importance of the work of recruiting is more particularly emphasized when one considers the large percentage of rejections, 67 per cent., the few accepted, 33 per cent.; and of the latter, despite rules and regulations and utmost care, some must be discharged on the first re-examination on the receiving ship, the number surveyed each year not in the line of duty or existed prior to enlistment, besides the cost in time, labor and keep, loss to the government, and the hard fact that the physically undesirable recruit is filling the place otherwise occupied by a good man.

The life at sea is at times arduous, calling for stamina and unexpected demands at any hour of the day or night, for the man enlists for general service, for war as well as for peace, never forgetting that the question of the line of duty and pension may arise in each case.

The applicant, as he presents himself at the recruiting office, is not of a distinct and separate class; on the contrary, he represents all types and comes from all walks of life, from the highest to the lowest. He is the graduate in medicine, law, theology, the teacher, the pharmacist, the student, the actor, the artisan, the clerk, the laborer, the schoolboy, the gentleman hobo and the tramp; from nearly every field of human activity men seek entrance into the enlisted force of the United States Navy.

Among such a collection of potential men-o'-war's men are met all degrees of physical defects as well as physical perfection (so far as this is possible); all degrees of cleanliness of person and clothes; men with and without means of livelihood; the stupid and the mentally weak, ascending to the highly trained and educated; men of travel, men from home and the poor devils looking for a home, men of the city and men off the farm; those of unsavory reputation, the lovelorn and other runaways—in fact, there are no exceptions, for all classes of men, for all reasons, wend their way to the examining room of the recruiting office.

The vagrants, the great unwashed, are undesirable as a class; they bathe at long and irregular intervals; their habits morally, mentally and physically, are scarcely commendable, and they have learned to dislike work. Sometimes I think they should be excluded without exception; the price paid for the few good men is too exorbitant for the undesirables sure to gain entrance. Just as the chain is no stronger than its weakest link, so the man when needed will break at his weak point. The ounce of prevention is also valuable in the work of recruiting.

In all wars the number of deaths from disease has been far in excess of that of casualties, and more discharges are due to sickness than to injuries.

"The examination is very thorough, and includes the mental condition, the principal organs of the body, the general formation, the chest capacity, the condition of the teeth, skin, joints and feet, and the presence or absence of hernia, varicocele and other disqualifications."[2] The recruit must be well-built all around, superior to the average in muscular development, or, if in youth, have potential strength. He must be sound, ready for all kinds of work and sudden strain.

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-First Annual Session held at St. Louis, June, 1910.

1. Harrington: Practical Hygiene, p. 565.
2. Practical Hygiene, p. 572

It must always be remembered that the man on the sick-list is counted on the ship's complement of enlisted force, and that his station would otherwise be filled by a capable man. "Such men are not merely ineffective themselves, but exercise a detrimental effect on the morale of their associates. The mental attitude of a man whose physical infirmities prevent him from fully meeting the demands of his station and surroundings soon becomes one of chronic discontent and discouragement, a nuisance to himself, his shipmates and his superior officers."[3] A man, attempting to enter the navy conceals and makes light of any trouble, but once enlisted, the same man magnifies it. A man-o'-war's man can not be coerced when the question of an operation arises and hence, he will often seek his discharge on the slightest provocation. "Certain disease influences are prevalent in, and more or less peculiar to, certain parts of the country, and applicants for enlistment from these sections represent the possibility of being the victims of them in such form and stage of development as would escape detection by the usual routine examination unless specially looked for."[3] Such, for instance, are the apparent heart affections of altitudes like Denver.

"The examining surgeon shall consider carefully the adaptability of the applicant in relation to the character of the duties which he may be called on to perform. Moderate height and compact build are requisite in the rating of fireman and coal-passer. The duties pertaining to these ratings are extremely arduous, and applicants for such positions must conform in every particular to the required physical standard."[4] The examining surgeon should remember that all candidates examined for the several special ratings are enlisted for the performance of all duties pertaining to the naval service, ashore and afloat.

The city-born and bred are already inured to certain hardships and to all diseases of children. Dr. Woodhull, lieutenant-colonel, Medical Department, United States Army, however, says on this point: "In raising new troops, when it is possible to select, for sharp and immediate active service take town-bred men. If a year or two can be added in which to train them, take country-bred men. Open-air military life is physical promotion to city men accustomed to irregular hours, unwholesome meals, and poorly ventilated rooms. To country lads the irregular and sometimes scanty meals, broken rest, necessity for prompt and exact action, and above all the certainty of acquiring such diseases as measles, whooping-cough, and mumps, which town boys always have in childhood, are very exhausting. After a year's training, country youths are more valuable."[1]

The recruit must be sufficiently young and moldable in order to adapt himself to the new life on board ship which, at the best, is unnatural. The age for entrance must be between 17 and 35.[1]

"It is almost the universal opinion that recruits ought not to be accepted below 20, or better, 22. At 18 years, the recruit is immature; the bones are not fully formed, nor have they reached their final hardness; the epiphyses have not become incorporated with the shafts of the long bones; the joints are not fully developed; the chest has by no means attained its full capacity; and the organs of the body, in general, are immature. So it happens that, at this age, it is useless to expect him to be in good condition after long-continued exertion, or to undergo privations which are nothing to the man of mature years and strength. At this period of life, he is still in the growing stage and needs all the energy of his body to bring the organism to completion, and the influences which mature soldiers contend against with varying degrees of success, namely, vicissitudes of weather, long marches, hard work in trenches, possible overcrowding in barracks and camps, poor ventilation, and poor and insufficient food, send him very quickly to the hospital."[1]

"Taken between the ages of 18 and 20, and drilled and trained with due regard to his immaturity and limit of endurance, the recruit often shows great progress in general development within the first year, particularly if, before enlistment, he was poorly fed, clothed, and housed, and engaged in an indoor occupation. His work should be moderate in the beginning and only gradually increased, since changes for the better in the human body can not be brought about suddenly like those for the worse, induced by attempting to do too much at the outset. Since his lungs, heart, and blood-vessels are not yet fully developed, he can neither go through the manual nor cover ground like a seasoned soldier. The heart is called on by the new and unaccustomed exercise to contract at a greater rate than had been its habit and the recruit soon becomes 'winded.'"[1]

While it has been the experience that men below 20 or 22 are too immature physically to make good soldiers, this does not hold good in the case of sailors, whose training and work do begin in accordance with his strength, and is gradually increased in demands on the newly added growth; this training occurs under the most hygienic surroundings. The life on board ship and at sea is one filled with novelties, and an open-air existence and the duties incident to this life might well be compared to a course in physical culture, whereby there is obtained a broadening of the shoulders, deepening and expanding of the chest, and a general symmetrical rounding out of the muscular frame. The change in the first year is remarkable; natural growth can claim but a portion of this rapid development.

One must not lose sight of the fact that after enlistment the recruit receives the same watchful care as a new-born babe, or blooded animal. His bathing-hours are prescribed, his clothes selected for him and their cleanliness assured by frequent careful inspections, and his food, likewise, is provided with the same care and regularity.

Men over 35 may reenlist, and more leniency for minor defects is exercised. "An enlisted man, not under treatment, but with infirmities contracted in the line of duty, not such as to prevent his performing the duties of a soldier, may be reenlisted, since it is recognized that what he may lack in some minor particulars in soundness may be counterbalanced by experience and habits of discipline."[1]

The examination is of necessity searching, since disability not only interferes with the best work, but there is in some cases the danger of carrying contagion to others. Every recruit is immediately vaccinated, and kept in the detention camp three weeks before he is permitted to come in contact with the other men. Every deviation from the normal must be noted for a final estimate, or summing up, in accordance with the navy standard.

In the British army defective development causes the greatest number of rejections, then defective vision, and third, diseases of the circulation. For the last quarter here in St. Louis, out of 689 applicants, 169, or 23 per cent. were accepted. Of these 689, 140 or 20 per cent. failed because of poor physique (underweight). The following rule is followed: Up to 5 feet 7 inches the weight should be twice the height or 2 pounds to the inch, and for every additional inch 7 pounds more in weight must be added. The chest measurement is a little less than one-half the height. The biggest men are the most deceptive in appearance, and can not be depended on for endurance: far from it. Men of the laboring class are often properly proud of their muscular development, and with great self-assurance undergo the physical examination, in many cases only to be bitterly and perplexedly disappointed.

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[3] Report of Surgeon-General, United States Navy, 1909.

[4] Instructions for Medical Officers, U. S. Navy, 1909.

Of the 689 applicants 102 or 14 per cent. failed because of defective vision.

"No applicant should be recommended as qualified for the rating of gun-pointer who can not read with the right (or aiming) eye at 20 feet the line on Snellen's test-card, which is normally seen at 15 feet (i. e., 20/15 vision). The minimum of 20/20 vision should be required with the eye not used in aiming. The test-card should be well illuminated."[4]

It is astounding how great is the amount of ignorance due to faulty eye-sight alone. Some men attempt to read the test-card twice with the same eye or to memorize the letters; one applicant with 3/20 vision in each eye had never worn glasses. Of the 689 applicants 13 per cent. were rejected for flat-foot, 6.5 per cent for heart affections, 5.5 per cent for defective teeth, and 4.5 for color-blindness.

For Asiatics, enlisted as mess attendants, the bars must be lowered from the American standard of physique to one corresponding with the former race, though one should always be on guard against such diseases as plague and beriberi. The Filipino is of smaller stature and the requirements are that young men of 18 to 19 years of age must weigh 105 pounds (15 pounds lighter than the American average) and have an expansion of 2 inches; those men of 21 years of age must be 62½ inches in height, must weigh 110 pounds and have a chest mobility of 2½ inches, in sharp contrast to the American of the same age, who must weigh 18 to 20 pounds more.

Men for the hospital corps must be superior to the average applicant; a grammar-school education is required for the men intended to perform a special and responsible work, to assist the surgeons in his varied duties, acting as his first assistant or anesthetist during major operations; in fact, their duties correspond to those of the male trained nurse of our professional brethren practicing ashore. To make assurance doubly sure, the recruit must sign a clean bill of health: "I believe myself to be physically qualified to perform the duties of the rating in which I may be enlisted." Likewise, the examining surgeon certifies that "I have carefully examined, agreeably to the regulations of the Navy, the above-named recruit, and find that, in my opinion, he is free from all bodily defects and mental infirmity which would in any way disqualify him from performing the duties of his ratings, and that he has stated to me that he has no disease concealed or likely to be inherited."

The one essential requirement for the best results in recruiting is the strict adherence to a fixed, invariable, systematic routine method of examination.

The medical officer must possess the proper spirit for recruiting to secure men physically good; he must exercise good judgment in the case of men on the borderline, never forgetting the important reasons for giving the government the benefit of all doubt, being very careful to note all minor defects which do not necessitate the rejection of the applicant. All kinds of influence are brought to bear on the judgment of the examining surgeon, aside from the question of competition of the recruiting officers to make a record in number rather than the standard of recruits of those enlisted. Physicians in civil practice, as well as politicians at times make it very emphatic how desirable it is to the government to obtain the services of their sons or friends.

The opposite state of affairs is illustrated by a pathetic though rather amusing instance: A young man of 21 desired to enlist while we were at Savannah, Ga. The mother called on board and, with a distressing flow of tears, asked how her son could be enlisted when the family physician sent word that he was physically incapacitated. There being no defects, the boy was qualified physically, much to his own delight. The father came on board with a gun to compel, in this gentle way, the non-acceptance of his son. The boy decided to run away from his family and of his own volition, being of age, joined his chums at the railroad station. We sailed down the coast and up the Mississippi river as far as Cairo, Ill., making numerous stops for the purpose of recruiting, and in the course of about four months we returned to Savannah, Ga. Meantime the young man had sent home photographs and graphic accounts of the fascinating life of the training station. The first day in port the mother came on board and, with similar tears, begged us to enlist her younger son, who, by the irony of fate, failed to pass the physical examination.

It has been demonstrated repeatedly that physicians ashore do not obtain the best results in recruiting, simply because they have not had the peculiar training which is acquired only under actual service conditions.

After this brief review of some of the more salient features of the subject of recruiting for entrance into the United States Navy, I believe that all will agree with me that good powers of observation, a keen eye, mental alertness, considerable knowledge of human nature, complete understanding as to service conditions and the calls that are made in each rating, besides a proper interest for the service are prerequisites in the medical officer who is detailed for the recruiting office, where, by far, the major part in the way of preventive medicine is accomplished for the navy.

Yaws Transmitted by a Fly.—Dr. E. W. Gudger (*Science*, Nov. 4. 1910) calls attention to an old recorded observation that yaws is transmitted by a fly. The traveller, Henry Koster, in his account of travels in Brazil (1809-1815), gives a description of the disease, yaws, in which he says: "This horrible disorder is contracted by inhabiting the same room with the patient, and by inoculation; this is effected by means of a small fly, from which every precaution is oftentimes of no avail. Great numbers of the insects of this species appear in the morning, but they are not so much seen when the sun is powerful. If one of them chances to settle on the corner of the eye or mouth, or on the most trifling scratch, it is enough to inoculate the bobas, if the insect comes from a person who labors under the disease." In commenting on this Gudger says that it will be noted that, while Koster is not able to give the specific name of the fly, he definitely declares it to be a certain fly with well-marked characters. It may be well to add that the disease called "bobas" throughout Brazil, is identified by Koster himself as identical with the "yaws" prevalent in Venezuela and the Guianas.

THE CONSERVATIVE UTILIZATION OF THE WASSERMANN REACTION

D. M. KAPLAN, M.D.
Director of Laboratory, Neurological Institute, New York; Serologist to the Montefiore Home
NEW YORK

The statements in this communication are based on a study of over 3,200 reactions, and in view of the confusion and uncertainty that still prevail in the minds of many physicians as to the significance and value of the Wassermann test I am hopeful that this work will tend to render clear some obscure points and enable us to handle the question of syphilis from a serologic point of view with greater accuracy than heretofore. The impression that I have received from almost two years' work with this reaction and the benefits that physicians and patients derive from its application is that the value of the Wassermann test for diagnosis and therapy has been greatly overrated. It still remains an interesting problem for the biologists to solve, but so far their work has not been decisive enough as to enable the practicing physician to rely implicitly on the outcome of a Wassermann test. I do not wish to discredit the work of Bordet and Gengou, nor is it my intention to belittle the application of the phenomenon of complement deviation to the diagnosis of syphilis. I do, however, maintain that the promiscuous use of the test by insufficiently instructed physicians is as dangerous as the use of reports from tyro serodiagnosticians. I lay particular stress on this point, because such use to my knowledge has been the cause of serious damage. The accompanying tables containing the material gathered during twenty months of work with the Wassermann test owe their scope and variety to the kind assistance of Dr. Abrahamson and the staff of physicians at the Montefiore Home. Its completion and the study of the effects of mercury on tabes was accomplished at the Neurological Institute, whose medical officers were ever ready to furnish necessary data for this work.

CONSIDERATION OF TABLES

The first and largest group of cases analyzed was composed of cases of locomotor ataxia. The Wassermann reaction in this disease, contrary to the still prevalent conception that all tabetics are syphilitic, was positive in 88 per cent. in one group of cases and 44 per cent. in another group. In considering tabes dorsalis one must not lose sight of the patient's condition, whether in the active tabetic state or in the quiescent. The physician's disappointment is quite evident when a negative Wassermann is reported on a patient with tabes; it is the conviction of many physicians that every tabetic ought to give a positive reaction, as they believe syphilis to be the only etiologic factor concerned in this disease. The tables show that over 300 cases of tabes dorsalis were analyzed and on an average only 66 per cent. of cases gave a positive outcome. Whatever the substance may be that is responsible for a positive Wassermann reaction in a patient with tabes, it may be taken as a sign first, that his tabes is of syphilitic origin, and secondly that if active manifestations are present mercury is indicated. The contention makes it quite evident that the knowledge of the tabetic manifestations is very essential to successful therapy. Whenever a serum is analyzed from a case of active tabes (crises, girdle, shooting pains) the reaction is usually positive (88 per cent.). This sig-

TABLE 1.—DISEASES OF THE NERVOUS SYSTEM

	Cases.	Positive.		Negative.	
	No.	No.	%	No.	%
Tabes, total cases	306	198	66	108	34
Tabes, quiescent stage	249	110	44	139	56
Tabes, active stage	57	51	88	6	12
Paralysis agitans	12	0	0	12	100
General paresis	64	56	88	8	12
Pseudohypertrophic muscular dystrophies*	15	0	0	15	100
Syringomyelia	4	0	0	4	100
Progressive muscular atrophy	2	0	0	2	100
Multiple sclerosis	16	0	0	16	100
Hemiplegia	118	8	7	110	93
Acute anterior poliomyelitis	5	0	0	5	100
Tumors of brain	14	2	12	12	88
Alcoholic neuritis	8	0	0	8	100
Lead neuritis	4	0	0	4	100
Bell's palsy	3	0	0	3	100
Sciatica	8	2	25	6	75
Symmetrical adenolipomatosis	3	0	0	3	100
Adiposis dolorosa	2	0	0	2	100
Myasthenia gravis	1	0	0	1	100
Amyotrophic lateral sclerosis	4	0	0	4	100
Myelitis	8	2	25	6	75
Erb's luetic spinal paralysis	1	1	100	0	0
Spastic paraplegia	11	3	27	8	73
Tumors of spinal cord	9	2	22	7	98
Chiasm disease	4	0	0	4	100
Ophthalmoplegia	3	0	0	3	100
Optic nerve atrophy	4	0	0	4	100

* In two instances the parents were also examined with negative results

TABLE 2.—DISEASES OF THE SKIN AND GENITOURINARY ORGANS

	Cases.	Positive.		Negative.	
	No.	No.	%	No.	%
Scleroderma*	5	5	100	0	0
Psoriasis	26	1†	4	25	96
Furunculosis	4	0	0	4	100
Rhinoscleroma	2	0	0	2	100
Lepra §	8	8	100	0	0
Primary lues, less than 3 weeks' duration, no Hg	101	90	89	11	11
Primary lues, less than 3 weeks' duration, after Hg treatment	20	12	60	8	40
Primary lues, more than 3 weeks' duration, no Hg	74	72	97	2	3
Primary lues, more than 3 weeks' duration, after Hg treatment	36	26	72	10	28
Secondary lues	340	296	87	44	13
Tertiary lues	290	212	73	78	27

* Another patient was examined with a negative result, but the diagnosis of scleroderma was uncertain.
† In the positive case the patient admitted syphilis.
§ These were all cases of long duration.

TABLE 3.—DISEASES OF THE VEGETATIVE ORGANS

	Cases.	Positive.		Negative.	
	No.	No.	%	No.	%
Aortic aneurism	16	12	75	4	25
Aortic stenosis	2	0	0	2	100
Tricuspid stenosis	1	1	100	0	0
Obliteration of anterior tibial	1	0	0	1	100
Chronic endocarditis	38	7	19	31	81
Pulmonary tuberculosis	280	6*	..	276	..
Asthma	24	1†	4	23	96
Chronic bronchitis	28	0	0	28	100
Tumors of the lung	6	4	67	2	33
Tumors of the liver	3	2	67	1	33
Tumors of the kidney	2‡	0	0	2	100
Tumors of the esophagus	2	0	0	2	100
Tumor of the iris	1	1	100	0	0
Tumors of the sternum	2	0	0	2	100
Noma	3	0	0	3	100

* In 2 of the positive cases the patients were cured and at no time showed tubercle bacilli. In the other 2 cases tubercle bacilli were present; also a history of lues.
† In the positive case the history was suspicious.
‡ At the autopsy one tumor proved to be a hypernephroma, the other a metastatic carcinoma.

TABLE 4.—MISCELLANEOUS DISEASES*.

	Cases.	Positive.		Negative.	
	No.	No.	%	No.	%
Exophthalmic goiter	10	0	0	10	100
Arthritis deformans	28	4	14	24	86
Gastric anacidity	15	10	67	5	33
Diabetes	36	8	25	28	75
Pernicious anemia	2	0	0	2	100
Polycythemia	4	2	50	2	50
Colitis	8	0	0	8	100
Gout	10	0	0	10	100
Acute articular rheumatism	18	0	0	18	100
Hodgkin's disease	4	0	0	4	100
Hemophilia	3	0	0	3	100
Arteriosclerosis basis cranii	14	4	28	10	72
Raynaud's disease	6	2†	33	4	67

* Of 540 cases analyzed for diagnosis, unmistakably positive findings were obtained in 80 per cent. Weakly positive reactions were obtained 8 times in cases which most likely were not luetic; 6 of the patients had jaundice.
† The 2 positive cases improved with iodids.

nifies that the disease is most likely of a luetic etiology and that mercury will not injure the patient. In case the reaction is negative in a patient with active manifestations it is safer not to use mercury, as in such a case the cause of the tabes is likely not syphilis. In patients with straightforward tabetic signs without active manifestations the reaction is positive in only 44 per cent., as I found, and antisyphilitic therapy is as a rule of no avail. It is quite evident that the ataxia and other symptoms the result of the degenerative process can not be influenced by drugs. It is consequently a better policy to leave the patient alone even if the Wassermann reaction is positive, provided he is in a state of comparative comfort.

I have examined fifty-one serums from active tabetics and found the reaction positive in forty-four, *i. e.,* 88 per cent. It is my belief that this form of exudative tabes is due to syphilis when the reaction is positive and that in about 12 per cent. of active tabetics the etiologic factor in case of a negative Wassermann still remains an open question. As the etiology of tabes is an important factor from a therapeutic and sociologic point of view, it is to the credit of the Wassermann test, which materially enhanced our knowledge in this direction and brought us considerably nearer to the truth than we were before the era of serodiagnosis in syphilis.

The results of my work support the old contention of von Leyden, who is against the idea that all tabetics are infected with syphilis, and tend to disprove the teachings of Erb, who believes that they are all of luetic origin. The administration of mercury in any of its forms in the case of an active tabetic should always be preceded by a careful Wassermann reaction and the drug used only when the result is positive.

It came to the notice of Dr. Joseph Fraenkel that some forms of tabes were decidedly harmed by mercury and that the course of the disease was markedly aggravated. I was enabled to follow this experience with the Wassermann reaction and found that in patients with the active form of the disease with a negative reaction mercury did no good and in some cases harm. It has been clinically observed that the Duchenne form of tabes is made decidedly worse by the use of mercury. I may therefore say with justice that if a clinically undoubted active tabes gives a negative Wassermann reaction, it may be taken, in view of what has been said before, as better to abstain from antiluetic treatment. Furthermore, the Wassermann test intelligently used will help us to solve more definitely the differentiation between the real tabes and the genuine general paresis of the old type, from the so-called pseudotabes and pseudoparesis and the so-called mixed forms, placing them all under one category of syphilis of the cerebrospinal system. Applied to therapy, the Wassermann test points out the indication for or against the use of mercury in the exudative types and the advisability of treating degenerative tabes is left to the clinician. As a rule the uselessness of mercury in these cases is conceded and the irreparability of the diseased tissues is accepted.

THE WASSERMANN REACTION AND HG IN TABES

Active Exudative Tabes.—Reaction positive, Hg indicated. Reaction negative, Hg contra-indicated.

Quiescent Degenerative Tabes.—Positive or negative there is very little that Hg can do to restore function.

To come to the conclusion as to the etiology of a case from the therapeutic efficiency of mercury is also erroneous. In the case of tabes we know that improvement may follow any and no treatment. It is advisable not to form an opinion as to the etiology of a disease from the accepted therapeutic specificity of a drug like mercury.

A patient in the Montefiore Home with all the signs of a brain tumor was treated by Dr. Fraenkel some fifteen years ago. The mercury apparently did some good and the etiology at that time was uncontrovertibly established. After three years of rather good health the patient succumbed to a relapse of the previous condition and at the autopsy showed a sarcoma from the thalamus to the fourth ventricle.

Another case (from the service of Dr. Spiller, to whom I am very thankful for this fact) showed a positive Wassermann reaction from a very competent worker. In this case also the patient was suffering from a brain tumor. The reaction was the occasion of vigorous mercury treatment which did no good whatsoever. After a short time the patient died and the autopsy in this case revealed a gliosarcoma of the brain and on abdominal examination a gumma of the liver. This warns one not to be too much dependent on laboratory reports and never to permit one's clinical acumen to be eclipsed, no matter how trustworthy the laboratory worker. In the above case it may have been of vital importance to have an operation performed if the possibility of a dual cause were recognized; mercury was given the preference as a result of the Wassermann reaction. This experience teaches a lesson: never to allow the Wassermann test to decide for or against an operation.

In general paresis mercury is as useless as in degenerative tabes. The poison that brings about the changes in the nervous system is very often stimulated to increased energy by the administration of mercury. I know of two instances in which the patients were reduced to invalidism, although previous to the use of mercury their vegetable organs were in a perfect condition. Two months after the use of the drug the patients died. In both the reaction was positive. The surprising therapeutic results with mercury in general paresis and the reported cures need closer investigation. There are very few distinctions between some cases of general paresis and some forms of syphilis of the brain and spinal cord. It is not at all too far-fetched to consider these improvements and cures as having been effected on patients suffering from syphilis of the brain and cord. The Wassermann reaction in these cases does not shed any light on the condition although the Munich school claims to be able to differentiate between the two clinical states. The only distinction that Plaut says can be found in the cerebrospinal fluid when a Wassermann test is performed, is that the reaction is always negative in syphilis of the brain and cord, and positive in general paresis.

Among the fifteen cases of pseudohypertrophic muscular dystrophy of various types all reacting negatively, the parents were examined in two instances, also giving a negative result.

It is of interest to note the positive results obtained in scleroderma. The fact that the reaction was positive does not in the least establish the etiology of this skin condition. It is personally known to me that mercury used for a long time in no way influenced the course of the disease.

The large percentage of positive results (75 per cent.) in aortic aneurisms greatly reflects on the cause of this disease. The predilection of involving blood-vessels is a well-known peculiarity of the syphilitic incitor, and the improvement that follows the timely administration of mercury in some cases tends to confirm the etiology in many instances.

In pulmonary affections the presence of the tubercle bacillus decides the etiology. I examined 280 cases and found the reaction six times positive. Two patients at no time showed the tubercle bacillus, and improved after mercury; two others also showed the presence of the bacillus; of these one improved and one died. An autopsy showed tubercles and a gumma in the lung and endarteritis luetica of the larger blood-vessels, especially the aorta. The cases of gastric subacidity gave a positive outcome in ten serums. These patients showed an increase in acid values after mercury. The positive Wassermann reaction need not introduce the idea that lues was the cause for the subacidity. I wish to thank Dr. W. G. Lyle for pointing out to me these facts, who at the time when these tests were made did not wish to express an opinion as to the significance of the coincidence. In a few cases a history of lues was obtained.

I encountered four cases of arthritis deformans with positive reactions; one of these improved after mercury administration; the course of the other three is unknown to me.

I shall now endeavor to form a conclusion as to the value of a negative Wassermann obtained from a study of the behavior of the test in patients with primary lesions and patients with symptoms bordering on this period.

THE VALUE OF A NEGATIVE WASSERMANN TEST

The table shows the percentage of positive reactions in primary lesions and in cases bordering on this period to be rather large. It is this class of patients that furnishes the greatest number of positive results. A negative outcome in a patient showing a primary lesion, or clinical signs suggestive of the symptoms of the stage bordering on the ulcus durum period ought to put the physician on guard as to the true etiology of the symptoms. A negative reaction during this period carries great weight, as the reaction is usually strongest during this period, and with even little technical knowledge usually gives a strong positive result. Comparing the chances of error from a clinical and serologic point of view it seems to me that it is much easier to err clinically than serologically, of course bearing in mind the stage of the disease. I would suggest that in such a case in which the reaction is negative, in view of the above symptoms, whenever the patient's condition permits it the physician should pursue the orthodox method of waiting until more evidence for or against syphilis appears. This is especially recommended in dermatologic practice, bearing in mind at the same time that waiting gives the spirochetes a firmer hold on the patient's constitution. I also believe that it is less harmful to let the patient wait than to subject him at once on meager evidence to the influence of mercury and have him ever afterward carry the odious knowledge of having been treated for syphilis. There are many such patients who years later consult a physician for unimportant ailments and when the possibility of syphilis is inquired into as a matter of routine their experience of the past gives a dominating impression and potassium iodid is prescribed. There are many such cases unjustly stamped luetic. The practice of waiting for corroborative evidence is a useful one because, first, we will not treat an innocent lesion for syphilis, and secondly, we may be able better to judge the value of Wassermann reactions. The experiences with Wassermann test brought me fourteen such patients. All of these were told to wait. In six cases undoubted signs of syphilis developed; the remaining eight at no time showed any symptoms suggestive of specific disease, in spite of the fact that no specific treatment was carried out. It is therefore my conviction that, whenever under the above circumstances it is possible to wait without placing in jeopardy the patient's health, this delay should be employed.

There is no test at hand to-day, no matter how carefully performed, that will infallibly demonstrate the true state of affairs and especially with such a treacherous disease as syphilis. Since the introduction of the Wassermann test many patients come to the serodiagnostician to ascertain if the disease is out of their system. They admit that long ago they had an eruption or a sore and were placed on mercury. The physician wishes to ascertain the efficiency of his treatment. As a rule most of these patients react negatively; first, because not sufficient time has elapsed since the last administration of mercury, which tends to negative the reaction; secondly if sufficient time did elapse, it may not be at all impossible that the lesion or eruption was not specific. In the absence of any help beside one's clinical training, before the days of the Wassermann reaction, it was very easy to make a mistake. It is gratifying to know that to-day, thanks to the Wassermann test, very few innocent lesions are submitted to antiluetic treatment and restrictions, and only those are obliged to carry the knowledge of having syphilis who were really infected.

SYPHILOPHOBES

There are some patients who take up the physician's time with unfounded fears as to the condition of their blood. Such patients are in great fear of having had remotely a syphilitic infection. A few come with ready-made diagnoses and bring in evidence the statements of a physician who told them they had the disease. If such a patient presents clinically no signs of syphilis, in any of its stages, and if this present opinion issues from a syphilologist, the reassurance to the patient is greatly enhanced when the report of the Wassermann reaction is negative. My point is carried if it is understood so far, that the diagnosis for or against syphilis clinically, and the negative or positive laboratory reports are of decisive significance only when used together.

As to the constancy of the Wassermann reaction in syphilis, the last word has not been said; as far as frequency and sharpness are concerned old leprosy cases present a much more definitely positive reaction than old syphilis. It is worthy of mention at this juncture that the older the leprosy the more marked the reaction, unlike the majority of cases of old lues. What there is in common between lues and leprosy is a speculative subject; the future may find the link that makes both diseases interfere with hemolysis while using the same inhibitory extract.

THE WASSERMANN REACTION AND ANTILUETIC THERAPY

If in a well-treated case of syphilis a previously positive reaction becomes negative, it is permissible to draw a favorable prognosis therefrom. It is certainly gratifying to note the disappearance of the Wassermann reaction, provided the clinical manifestations go hand in hand. A negative Wassermann in a patient presenting clinically vestiges of lues is not to be considered conclusive. It is much more rational and useful to obtain a cure clinically first and to have the laboratory corroborate the cure with a serum reaction. In tertiary syphilis a negative reaction is of no value after treatment, except when the patient's serum is so negative that when added to another positive serum the combined mixture will result in a negative outcome. The test is performed as follows:

Five hundredths of a c.c. of an established positive luetic serum are placed in a test-tube and mixed with 0.2 c.c. of the negative luetic serum to be tested; the mixture is incubated for half an hour and complement added. This is incubated another hour, and cells and amboceptor added. Observations are then taken.

A somewhat analogous method was recently advocated by Brauer.[1] The author omits the study of the effects of the mercury serum (serum from patients without syphilis who received mercury injections) from normal individuals on luetic serums, a study to which I refer in a recent article.[2] The consideration of the Wassermann reaction from the therapeutic standpoint is not exhausted by the few examples cited. It must be borne in mind that some tertiary syphilitic manifestations can never be improved by antiluetic treatment and it must not necessarily follow that a luetic process is at a standstill because of a negative Wassermann reaction. I know of patients with tertiary syphilis in whom a negative reaction could never be obtained, no matter how thoroughly mercury was administered.

EFFICIENCY OF WORKERS

It is not to be denied that the Wassermann reactions reported on by beginners in insufficiently equipped laboratories certainly did some harm; even the best work from laboratories equipped for the sole purpose of performing the reaction loses much of its value when used promiscuously by physicians who look for too much help from such reports. I know of instances in which negative reports decided the etiology of a disease without further clinical investigation. Such confidence is met rarely to-day, as physicians begin to appreciate that even a positive Wassermann reaction does not always spell syphilis.

It becomes the duty of everyone actively engaged in the performance of the reaction to render clear certain shortcomings of the test and to place clearly before the physician who is to use the submitted report, the significance of a positive, a weakly positive and a negative reaction, and to what extent the test can be relied on as a whole. It is needless to emphasize that such advice should hail from matured workers only, who not only know how to perform the test, but whose enthusiasm has cooled as the result of an extensive experience. It is to be granted that the best workers make mistakes; some are pardonable, others not; but when we consider the delicate adjustments of the test, it is no wonder that different serologists report differently on the same serum. The clinicians as a rule, in the case of conflicting evidence, form their own opinion and treat the condition on its merits.

A negative report on a ripe syphilitic serum, however, does reflect on the abilities of the serologist (considering the difficulties of the reaction) as well as positive report on a serum from a healthy person. It is important to bear in mind that the value of a negative Wassermann reaction for diagnosis, except in the instances mentioned before, is almost *nil;* it is different when the report is requested to ascertain the therapeutic efficiency of a treatment. The patient's well-being and the time elapsed since the last use of the drug must be noted. There is generally an error committed in sending patients to the laboratory without stating the time elapsed since the last treatment. A negative Wassermann reaction together with a complete absence of subjective and objective symptoms, with treatment as remote as possible (six months or more) is the ultimum bonum the clinician desires to attain.

The instructions to such patients are to have them report at stated intervals for a physical examination in order that the least deviation from the normal may be investigated with the help of a Wassermann reaction. Discharged patients should be systematically supervised with the help of the laboratory; the reactions should be kept on record, and the patients giving persistently negative results may be considered as practically cured. Such patients may even be permitted to marry. Some physicians use the Wassermann test for therapy only and depend very little on its help for diagnosis. In many instances the test is performed with the sole intention of reassuring the patient.

READING AND REPORTING RESULTS

It is very sad but nevertheless true that our knowledge of the reaction has not progressed far enough to make all work on these lines uniform in all laboratories. In fact, the same serum if sent to a number of laboratories will result in as many different interpretations. These conflicting reports fundamentally shake the confidence of the clinicians who are to use them.

There is a movement on foot in New York to bring together practical serologists and render their methods for work and standardization more uniform than heretofore. Such endeavor, I believe, will bring about more accurate work and less conflicting results. It may perfect the methods so that the physicians will be able to use it more extensively, especially for therapeutic purposes. It may also change the conception of the syphilitic etiology of some diseases; for instance, locomotor ataxia. For the present, I believe that the only way of rendering useful service to the cause of serodiagnosis is to employ in the case of the Wassermann test the original method plus another modification and to become thoroughly conversant with its peculiarities. To minimize chances of error it is best to perform the reaction twice with each method and to report results after the elimination of every reaction that is not unquestionably positive. I wish to emphasize particularly this manner of coming to conclusions and to disregard any form of reading results and reporting to the doctor in an unintelligible and confusing manner. I am referring to the attempt made by some workers to designate the results of their reactions as 80 per cent. or 90 per cent., etc. Citron had some such arrangements using a certain number of crosses (+ + +) and dashes (+ + —) or (+ — —) to impress on physicians the intensity or weakness of his results.

I wish to be placed on record as considering this form of arriving at conclusions quantitatively as absolutely unreliable, for the simple reason that, no matter how uniform the every-day work of a serologist, he will on many occasions report differently on the same serum. Irrespective of this, we are not at all advanced enough nor are our methods uniform enough to justify the adoption of such a meaningless scale for recording the results of Wassermann tests. While one will have 80 per cent. another will have 90 per cent. and a third something different again. I believe that the answer "positive" or "negative" for diagnostic purposes is all that our colleagues expect from us and that a confusing report of 80 per cent. positive, especially where a definite answer is expected, will tend only to mislead the physician. When the reaction is performed to ascertain the effect of treatment no patient should be discharged until the serum behaves like a normal serum. The serologists who wish to express their results numerically may be excused in the case of therapeutic tests, as physicians are sufficiently instructed in the majority of instances to know that only the entire disappearance of the reaction from the serum is of value in successful therapy.

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[1] Brauer: München. med. Wchnschr., 1910, No. 17.

[2] Kaplan, D. M.: The Theoretical Consideration of the Wassermann Reaction and Its Practical Application, Jour. Am. Med. Sc., July, 1910.

The method of forming conclusions is an important qualification of every serologist and no one ought to consider himself thoroughly competent to work with serum unless this degree of perfection is attained. Luckily it is not so dangerous to make a negative report in a syphilitic individual as it is to make a positive report in an innocent patient. I therefore state again that it is proper to perform the reaction twice, using the original Wassermann test and, as I have been in the habit of doing, also a Noguchi test. These tests are best repeated on the following day and anything that is not distinctly positive ought not to be used for diagnosis. No dubious results ought to be reported. It is every time better and by far safer to admit that the result of the Wassermann reaction is inconclusive and that another reaction ought to be performed. In case the reaction is performed for therapy and the serum does not behave like an absolutely normal serum (negative) the patient ought to be treated more and have his serum reexamined after a suitable time has elapsed.

SUMMARY

1. When a serum is submitted for diagnosis the laboratory report should read "negative" or "positive." No qualifications as to degree are necessary.
2. For diagnostic and therapeutic purposes the laboratory report should always be collated with clinical findings.
3. Negative reports are of value in therapy.
4. Treatment should be stopped for four to six months after the patient becomes clinically and serologically normal and at the end of this period the test should be repeated.
5. All patients cured of syphilis ought to have for preventive purposes a test performed twice a year.
6. Any reappearance of the reaction even in traces is to be dealt with as under Paragraph 4.
7. Some patients who have had syphilis never lose the positive reaction in spite of any therapy.
8. A negative report obtained on a serum from a suspicious case should defer treatment until the course of the disease decides the etiology, provided there is no danger in delaying treatment.
9. With a positive report one must not lose sight of the possibility of another disease being present besides syphilis.
10. In my experience advanced scleroderma and old leprosy are more positive than old syphilis, quantitatively and qualitatively.
11. In active tabes 88 per cent. and in quiescent tabes 44 per cent. of positive reactions were obtained.

THE COLONOSCOPE

HEINRICH STERN, M.D.
NEW YORK

I have devised an instrument for the inspection of the sigmoid flexure which possesses a number of advantages over other instruments intended for the same purpose. The following description will prove this contention:

Figure 1 represents the sheath with obdurator. A is the sheath of ⅝ inch diameter and 12 inch working length. B is the obdurator, C the lamp. The wiring for the lamp is armored in the wall of the tube. The conduit projects neither on the inside nor on the outside of the sheath. The lamp itself is loaded in a capsule with a water-tight screwtop and a glass window. The capsule projects somewhat beyond the distal opening of the sheath, and is of material assistance in pushing aside rectal folds in the vicinity of the mouth of the sigmoid flexure, and may be utilized as a guide. The light arrangement is a novelty in all rectal examining devices. It permits the use of a telescope or optical system to see at right angles, thus enabling one to inspect the first and even the second portions of the flexure. D is an improved electric coupling with on and off switch; this coupling is very reliable. E is a stopcock, to which may be attached the air-inflating apparatus.

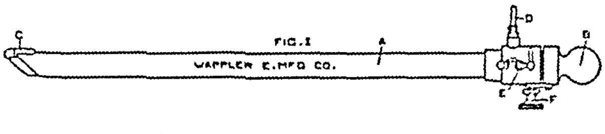
FIG. I

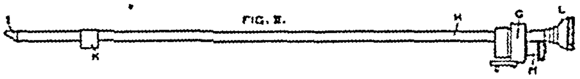
FIG. II.

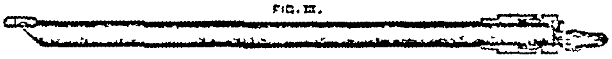
FIG. III.

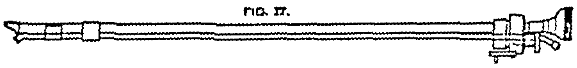
FIG. IV.

F is a locking and releasing device for the conical fittings of sheath and optical system. Its function is to lock and separate the sheath and its members while the instrument is in position without jarring, and to avoid discomfort to the patient.

Figure 2 is a double optical system: through the long tube one is enabled to see at right angles to the axis of the instrument, and through another eyepiece the portions in front are magnified, which facilitates their minute inspection. G is the cone fitting in sheath. H designates the telescope tube. I is the objective, giving a right sided and upright image. K shows a circular spring-holding tube, with lens system on one side of the tube. L is the eye-piece of the optical system, and M the eye-piece, which is removable and gives a magnified view of the parts straight ahead.

Figure 3 is a longitudinal section of the sheath, with an end for air-tight closing. It has a lens for bringing the object at the distal end of the tube nearer the operator's eye, and a rubber nipple admitting instruments for operation and application while the rectum and flexure are under air distention.

Figure 4 illustrates a lens system, with a tube bent on the far end for guiding and deflecting applicators into the flexure.

250 West Seventy-Third Street.

Military Versus Medical Heroes.—It is a curious commentary on our civilization of to-day that we litter every public place with granite tributes to brigadiers, while the families of these men [Reed, Carroll, Lazear and others] beat at the doors of Congress for adequate support and the crowd passes thoughtlessly by their graves.—Martin Cooley, *Jour. Outdoor Life*, October.

EXOPHTHALMOS IN BRAIN TUMOR

WITH REPORT OF EIGHT CASES [*]

T H WEISENBURG, M D
Professor of Clinical Neurology, Medico Chirurgical College,
Neurologist to the Philadelphia General Hospital
PHILADELPHIA

Little emphasis has been placed on the occurrence of exophthalmos in brain tumor if the literature on this subject is taken into consideration, and yet in the clinical description of such cases it is not infrequently mentioned My attention was particularly directed to this subject by a number of cases of brain tumor in which exophthalmos was a prominent symptom, and in a cursory examination of the histories of patients with brain tumor which I have observed during the last five years, protrusion of the eyeballs was present either unilaterally or bilaterally in ten, five with necropsy Of these, eight are here reported.

With the exception of isolated instances, the only extensive papers on the subject are by G Flateau,[1] and, to a less extent, by Rosenblath,[2] who together collected twenty-four cases of tumor accompanied by exophthalmos The neoplasms were located in practically every part of the cranial cavity Six were in the frontal lobe, two in the hypophysis, one in the pineal gland, one a basal tumor involving the pons, medulla and cerebellum, two in the cerebello-pontile angle, one in the pons, two in the cerebellum, two in the temporal lobe, one in the right lateral ventricle, and six were instances of internal hydrocephalus

The nature of the growths varied, consisting of glioma, sarcoma, neuroma, endothelioma, psammoma, and echinococcus, and it is evident from this that the character of the tumor probably had no direct bearing on the occurrence of exophthalmos any more than that certain forms of tumor may give metastasis

In some of these cases the orbits were examined, and in others the nature of the growths was such as to preclude the opinion that there was metastasis to the orbital cavity Exophthalmic goiter was excluded in all

The exophthalmos was bilateral in all the cases of internal hydrocephalus and in those tumors in which the lesion involved both sides of the brain, with the exception of one basal tumor In the unilateral growths the ocular protrusion was one-sided In all the protrusion was on the side of the lesion, with the exception of one cerebello-pontile tumor.

With the exception of the above no attempt is made to quote the cases from the literature Of my personal cases only a brief abstract of the histories is given

REPORT OF CASES

Case 1—*Gliomatous tumor of lateral and third ventricle compressing and implicating one optic thalamus with bilateral exophthalmos*—Previously reported[3] The patient was Miss M—n a girl about 20 who presented, as one of the early symptoms, a tendency to write in a perpendicular direction instead of horizontally, this being followed by gradual loss of vision Examination showed a marked bilateral choked disk The symptoms of intracranial pressure were very prominent When she was examined by me she had bulging of both eyeballs, with ptosis and deviation of the eyes in a downward direction, paralysis of associated ocular movement, and of convergence upward less to the right and left, and least downwards At necropsy there was found a tumor of the left lateral ventricle, which grew into the third through the foramen of Monro, and compressed the optic thalamus All the symptoms which she presented were readily explained with the exception of the exophthalmos

The tumor was a vascular glioma In the process of its growth from the lateral to the third ventricle it compressed the choroid plexus, the velum interpositum and the veins of Galen, and it is probable that it caused a stasis in the cavernous sinus, although unfortunately no orbital examination was made She had, however, a *congestion of the veins* in the eyelid, with edema and great pulsation of the vessels of the neck (Fig 1)

Case 2—*Tumor of the third ventricle, compressing both optic thalami with mild exophthalmos*—The patient, Miss C—s, was a girl of 17, who had marked pressure symptoms of brain tumor with choked disk of 5 diopters She had besides weakness of both external recti, paralysis of associated ocular movement upwards, with loss of convergence in the same direction, and a drunken, ataxic gait, with incoordination of the limbs At necropsy an extensive gliomatous tumor was found in the third ventricle, compressing both optic thalami and extending downward and bisecting the cerebral peduncles In this case the orbit was not examined, but there was no reason to suspect metastasis

Case 3—*Clinically diagnosed as tumor of the third ventricle with unilateral exophthalmos*—The history of this patient (Miss M——z) is very similar to that of Patient 2, but unfortunately no necropsy was permitted It was that of a girl of 27, who had choked disk of 6 diopters in the right eye and 4 in the left, with marked headache, nausea, vomiting, vertigo, temporary attacks of loss of vision, and a moderate prominence of the right eye Examination demonstrated weakness of associated ocular movement and of convergence upwards, and irregular nystagmus when attempting to look in the same direction, distinct cerebellar gait and incoordination, more marked on the left The symptoms were indicative of a possible tumor in the third ventricle, as they resembled very much the case cited above It is noticeable that the exophthalmos was on the side of the greater swelling of the optic nerve

Case 4—*Clinically diagnosed as tumor in the third ventricle Bilateral exophthalmos*—The patient, R——n, a boy of 12, had cerebrospinal purulent meningitis (?) from which he recovered Two months afterward he began to have headache, dizziness, nausea, vomiting, dimness of vision, weakness, and a staggering gait Examination showed paralysis of associated ocular movement upward and some impairment to the left, with disturbance of convergence in the same directions, weakness in the right face, arm and leg with Babinski reflex, and protrusion of both eyeballs, which was equally marked on both sides, and marked choked disk Unfortunately no necropsy was obtained

Case 5—*Clinically diagnosed as glioma of the pons and peduncle Bilateral exophthalmos*—The patient C——y was a boy of 14, who began with headache, nausea, vomiting, diplopia and difficulty in walking, which brought him to the Will's Eye Hospital, where it was found that he had a bilateral marked choked disk of 6 diopters Examination demonstrated bulging of both eyeballs, more of the right, with paralysis of associated ocular movement and of convergence upward and to the left, which later also involved associated movements to the right Besides, there was a distinct cerebellar gait, with weakness of the right arm and leg and peripheral weakness of the left seventh nerve The symptoms were indicative of a gliomatouh tumor in the upper part of the pons and peduncle, principally on the left side It was noticeable that the exophthalmos was greater on the right, although the symptoms were indicative of a greater tumor on the left

Case 6—*Glioma involving the posterior part of the medulla, pons and cerebral peduncle Unilateral exophthalmos*—This case has already been reported[4] The patient, R——y, was 44 years of age, and gradually developed general pressure and local symptoms of a right cerebellar tumor, with a choked disk of about 3 diopters. He was operated on over the right cerebellar area, but nothing was found. While before the operation there was only a partial weakness of the right third and of the sixth, some diminution of hearing in both ears and a little difficulty in articulation, after it there gradually developed a protrusion of the right eyeball and increased weakness in the distribution of the right third, and later paralysis of the right motor and sensory fifth, seventh and twelfth. Besides there was difficulty in articulation and swallowing. At necropsy, an extensive gliomatous tumor was found which involved practically all portions of the cerebellum, but especially the vermis in its inferior part and the left lateral lobe. It also extended diffusely into all the cerebellar peduncles, the posterior portions of the medulla almost as low down as the decussation, the posterior part of the pons and cerebral peduncles, and extended into the posterior portion of the left optic thalamus and internal capsule.

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[*] Read before the Section on Ophthalmology College of Physicians, April 1910

[1] Flateau G Deutsch Arch f klin Med, 1903 lxxvii 433

[2] Rosenblath Deutsch Ztschr f Nervenh 1906 xxi 335

[3] Weisenburg T H and Guilfoyle, W F., Rev Neurol and Psychiat, June, 1910, p 325

[4] Weisenburg T H Extensive Gliomatous Tumor Involving the Cerebellum and the Posterior Portions of the Medulla, Pons and Cerebral Peduncle and the Posterior Limb of One Internal Capsule The Journal A M A, Dec 18, 1909, p 2086

In this case the exophthalmos was unilateral, and on the side on which the cerebellar exploration was performed, and developed after the operation. It is to be noted that the symptoms of cranial nerve and cerebellar involvement gradually developed and became much more marked after the operation and coincidentally with the exophthalmos, and were explained by the growth of the tumor. There was no metastasis to the orbit.

Case 7.—*Basal tumor in posterior cranial fossa. Bilateral exophthalmos.*—The patient, Miss M——s, was a young woman of 20, whom I first saw in the Will's Eye Hospital and subsequently transferred to my wards in the Philadelphia General Hospital. She had all the pressure-symptoms of brain tumor, with marked choked disk, cerebellar gait, incoordination, central weakness of the right seventh, motor fifth and tongue, weakness of all the limbs, possibly more of the right, with increased reflexes. Very early she developed exophthalmos, more marked on the left, and there was besides immobility of the left eyeball with ptosis, the only movement possible being a slight movement downward and inward. The right eye could be moved downward, but not well in an upward direction. The patient died in the service of Dr. Spiller,[5] who found a very large tumor in the posterior cranial fossa. The occipital lobes had been pushed apart and the cerebellum displaced almost to a right angle with the brain stem.

Case 8.—*Sarcoma, compressing the temporal lobe, optic chiasm and posterior orbital bones. Unilateral exophthalmos.*—This patient, Mrs. S——a, whose case was reported a year ago by Dr. de Schweinitz before the Section on Ophthalmology, was a woman of 63, who, in 1900, injured the right orbit, but not very severely. Eight months afterward she began to have a bulging of the right eye, which from then on progressed. Dr. Wendell Reber studied her for a long time, and he states that there were never present ocular palsies. She had optic atrophy. The accessory sinuses were always normal. *X*-ray examination was negative. Eight years after the beginning of the exophthalmos, she was admitted to my wards in the Philadelphia Hospital, having then general epileptic convulsions, which were followed by temporary left hemiplegia. She never had any general symptoms of brain tumor. She died eight years after the beginning of the exophthalmos (Fig. 2).

At necropsy a tumor, a sarcoma, was found resting in the middle cranial fossa, it being about the size of a small orange. It compressed the orbital bones, the orbital surface of the temporal, the posterior part of the orbital surface of the frontal and the extreme anterior part of the cerebellar lobe. It also deviated and pressed on the optic chiasm, displacing it slightly to the opposite side, and also pressed on the foot of the cerebral peduncle (Fig. 3).

Dr. de Schweinitz, who was present at the autopsy, does not believe that the exophthalmos was the result of pressure on the cavernous sinus, although he cannot prove that it was not the result of this. He carefully dissected the specimen and there was no direct pressure on the sinus, nor was there on any of the nerves passing into the orbit. He says, however, that it is perfectly possible that the exophthalmos might have had such an origin. There was, he further states, a rather hard edema of the posterior tissues of the orbit.

In view of the autopsy, I do not know that it is possible to explain the exophthalmos in any other way than from a purely local cause, and the only local cause that can be given is pressure on the cavernous sinus, which possibility Dr. de Schweinitz himself admits. In support of this, the second, third, fourth and sixth nerves on this side were found diseased, this being especially true of the second, showing that pressure was exerted on it. Besides, the optic chiasm was compressed and deviated to the other side and the foot of the cerebral peduncle was distorted.

REMARKS

In a summary of my cases it is noticeable that in four, Cases 1, 2, 3 and 4, the diagnosis was tumor in the third ventricle, and in two, Cases 5 and 6, a glioma which involved both the pons and peduncle. In Case 7 the growth was in the posterior cranial fossa and was of such size that it compressed the occipital lobes, and twisted the cerebellum on its axis. In Case 8 there was a sarcoma in the anterior portion of the middle fossa which directly pressed on the orbit and the exophthalmos was undoubtedly the result of pressure on the cavernous sinus.

In all, the intracranial pressure was extreme, as indicated by the prominence of the headache, nausea, vomiting, vertigo and especially the choked disk. It is evident also that in the first six there was interference with the flow of the cerebrospinal fluid, inasmuch as there was either direct involvement of the third ventricle or pressure on the aqueduct of Sylvius.

The exophthalmos was bilateral in five and unilateral in three. In those in which it was unilateral either the lesion or the intracranial pressure was greater on the same side. In one, Case 3, there was supposedly a tumor in the third ventricle and the exophthalmos was present on the side of the greater swelling of the optic nerve. It is possible that protrusion of the left eyeball might have developed later. In the second, Case 6, the exophthalmos developed, after the exploratory operation, on the same side, and coincidentally with the development of other cranial symptoms. In the last, Case 8, the exophthalmos was the result of pressure of the tumor directly on the cavernous sinus.

In those in which the exophthalmos was bilateral the lesion was also bilateral and with the exception of one, Case 5, there was a greater prominence of the eyeball on the side of the greater involvement. The grade of the exophthalmos varied, it being marked in some and mild in others. In all it was progressive and came on early.

These observations agree with the collected cases quoted.

The conclusion, then, which can be drawn from the above is that exophthalmos occurs in brain tumor and especially in those cases in which there is great intracranial pressure and interference with the flow of the cerebrospinal fluid.

The question naturally arises how these factors produce exophthalmos. It is well known, especially through the physiologic studies of Leonard Hill, that the earliest manifestation of increase in intracranial pressure is engorgement of the venous circulation, this producing the familiar dilatation and tortuosity of the retinal vessels. There are, however, as has been mentioned by Cushing,[6] other external evidences equally characteristic, although less often commented on, which consist in dilatation of the vessels of the scalp and particularly the smaller venules of the eyelids.

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[5] Spiller, William G.: A Further Contribution to Palliative Operations for Brain Tumor, The Journal A. M. A., Jan. 23, 1909, p. 277.

[6] *Osler's Modern Medicine, viii, 431.*

If in addition to the above there is exerted pressure on the cavernous sinus, thrombosis of which is the common cause of exophthalmos, the explanation is not at all difficult. Such was the fact in my cases, for in all there was direct pressure on the cavernous sinus. In the first four the tumor was in the third ventricle and pressure must have been exerted on the optic chiasm and basal sinuses, while in Cases 5 and 6 there was obstruction of the cerebrospinal fluid in the aqueduct of Sylvius, this undoubtedly causing dilatation of the third ventricle. In the last two there was direct pressure on the sinus by the tumor.

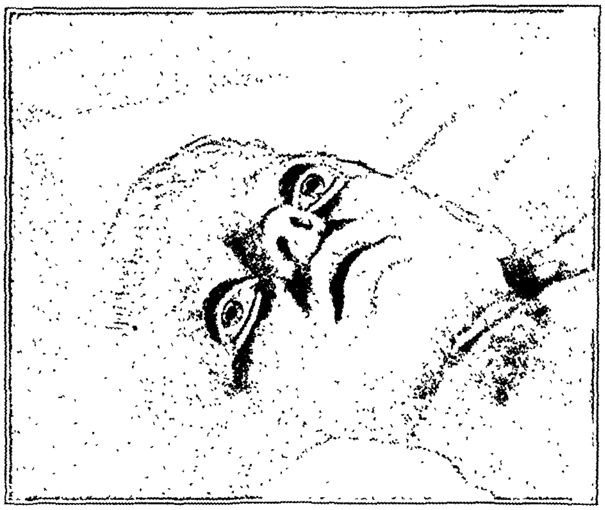

Fig. 1.—Exophthalmos in tumor of the third ventricle. Case 1.

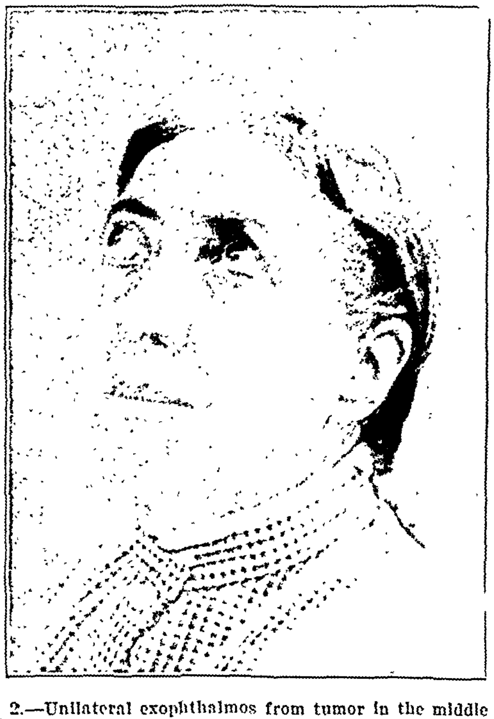

Fig. 2.—Unilateral exophthalmos from tumor in the middle fossa. Case 8.

Flateau advanced a very plausible theory for the occurrence of exophthalmos in those cases in which there is no direct pressure on the cavernous sinus. According to him the blood of the orbit under normal conditions is not depleted by the *facial vein* but by the *cavernous sinus*, and the outflow can be interrupted either directly by pressure on the ophthalmic vein or indirectly from a distant sinus; and tumors, for example, of the posterior cranial fossa can so obstruct the outflow of the blood in their own sinus that a portion must flow out by means of the cavernous sinus. Therefore, the back flow of the blood through the eye will be made so difficult that there will result a stasis in the orbit, this producing exophthalmos.

It is noteworthy, however, that in the material at my disposal, which consisted of the records of about 75 cases of brain tumor, exophthalmos occurred only in the cases mentioned and was readily explained by direct pressure on the cavernous sinus.

CONCLUSIONS

The conclusions which can be drawn from the study of this subject are:

1. Exophthalmos accompanies brain tumor more frequently than is generally supposed.

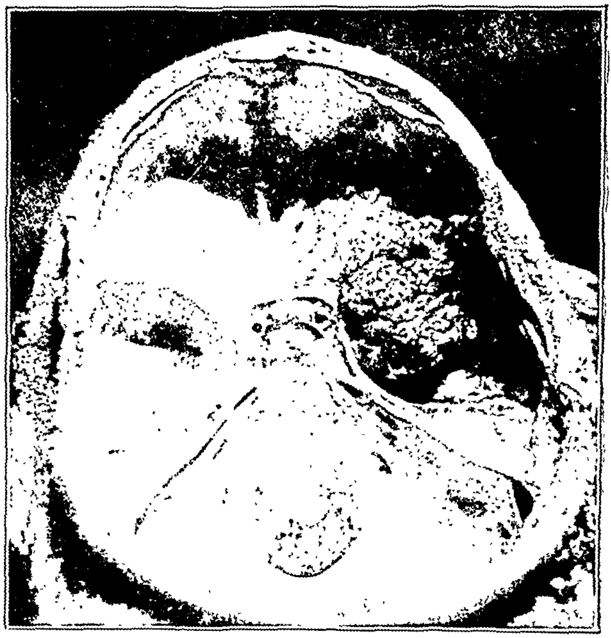

Fig. 3.—Tumor in middle fossa, producing unilateral exophthalmos. In patient whose photograph is shown in Fig. 2.

2. It occurs only in those cases in which there is great intracranial pressure, especially when there is in addition direct interference with the normal flow of the cerebrospinal fluid.

3. Exophthalmos is produced by direct pressure on the cavernous sinus.

4. Its presence is of some clinical value inasmuch as unilateral exophthalmos is nearly always indicative of an intracranial lesion on the same side.

5. In those cases in which the protrusion is bilateral there is nearly always a greater exophthalmos on the side of the greater intracranial pressure or lesion.

2030 Chestnut Street.

Diagnosis of Extragenital Chancres.—The main point in the diagnosis of extragenital chancres is to remember that they may occur on any part of the body; if they are not thought of they will escape diagnosis. The old adage is here reversed—it is a case of out of mind, out of sight.—C. F. Marshall, in the *Practitioner.*

BRAIN TUMOR OF PSYCHOMOTOR AREA

CAUSING JACKSONIAN AND GENERALIZED CONVULSIONS, VISUAL HALLUCINATIONS, SOMATIC DELUSIONS, ASTEREOGNOSIS AND HEMIPLEGIC PARALYSIS. OPERATION. RECOVERY, MENTAL AND PHYSICAL *

FRANK WARREN LANGDON, M.D.
Professor of Psychiatry, University of Cincinnati, Medical Department
AND
SIMON PENDLETON KRAMER, M.D.
Professor of Principles of Surgery, University of Cincinnati, Medical Department
CINCINNATI

NEUROLOGIC REPORT BY DR. LANGDON

The case here reported presents no unusual features pertaining to the growth itself, its localization, the operative procedures or the recovery therefrom. In fact, it may fairly be classed as commonplace in those respects. It had been considered worthy of record, however, by reason of its peculiar symptom-complex, combining marked psychic as well as somatic disturbances; the practical absence of those important "general" symptoms; headache, vomiting, vertigo and papilledema; and the small amount of functional defect remaining at this date (March 16, 1910) four months after operation.

History.—Nov. 5, 1909, Dr. R. B. Hannah,[1] of Georgetown, Ohio, asked me to see a woman who had been developing some mental symptoms for a few weeks. It was also stated that preceding these evidences of insanity there had been some convulsive attacks, local and general. The development of the abnormal mental state, however, appeared to be the determining factor in seeking a consultation. Dr. Hannah had been in charge of the case a short time only, and at once recognized the probability of physical disease as a foundation for the nervous and mental manifestations.

The patient was a farmer's daughter, aged 39, single, intelligent and capable up to two years previous to my visit. She had for some years performed important clerical duties as a railway agent and telephone operator at a local station. The family history and surroundings were excellent and prosperous. There was a history of a blow with a croquet mallet on the left parietal region in childhood. There were no sequelæ of importance following this injury; the patient was not unconscious and not confined to the house on account of it. There was no scar at the alleged site of the blow. Two years previous to this examination there had been a "jerking" of the right hand and arm, followed in a few moments by "unconsciousness." These attacks had been repeated about twenty times in the two years just past. Following them was a progressively increasing weakness of the right hand. Two weeks previous to this examination the patient had visual hallucinations and some delusions that surgical operations had been made on her eyes and right leg.

First Examination.—This was made at the home of the patient Nov. 5, 1909. The patient was in bed. Consciousness was somewhat clouded, but the patient carried on ordinary conversation fairly well. She appeared mildly elated, or perhaps a state of euphoria would better describe the emotional state. Asked if she sees anything unusual, she answered "Yes; holes in the ceiling and walls; small ones; many of them." There was no defect in ceiling, nor was it papered. There was nothing to be mistaken for holes; in other words, this was a true hallucination, not an illusion. While the pupillary reactions were being looked for, she volunteered the information that her "eyes had been operated on recently" (probably the opthalmoscopic examination made a few days previously). Asked if anything else had been done, she replied: "Yes, *my right leg was cut off recently.*" This was stated in quite a matter-of-fact manner, without any evidence of regret or emotion. The patient conversed rationally on many ordinary topics, but on being questioned as to any speech defect, she said she "loses a word occasionally." Speech tests showed reception and understanding good for ordinary words. Test-words and sentences were repeated correctly and without defect of articulation. Internal speech appeared good; she could describe objects, letters, words, etc., and tell their meanings. With the practically powerless right hand she could tell the shape of objects, but could not name them (astereognosis). Owing to weakness in this hand, she could not grasp a pencil.

Cranial Nerves: I, not tested; II, ordinary vision, good; no fundus changes reported by Dr. H. P. Shelton, who kindly examined the eyes a few days before my visit; III, IV, VI, no ocular palsies; pupils reacted well to light and accommodation; V, no defects noted; VII, slight weakness in lower right face group; VIII, hearing good to ordinary tests (voice and watch); IX, X, XI, no defects noted; XII, tongue movements good; no trophic changes.

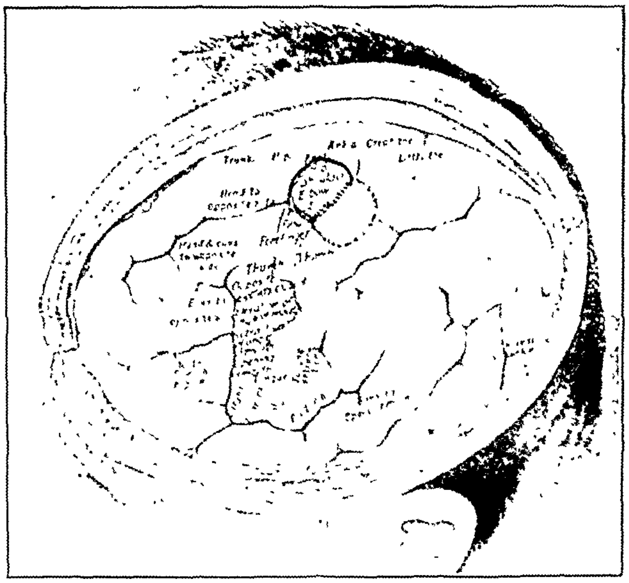

Fig. 1.—Location of brain tumor.

Trunk and Extremities: Motion: Right hand and entire arm useless, relaxed; could bend elbow and wrist and close fingers, but had no grasp; patient could not hold pencil; right leg also weak; could move joints, but could not walk; power in left arm, hand, leg and foot appeared good.

Sensation: No anesthesia to ordinary touch and pin-prick; no differences noted between the two sides of body and limbs.

Reflexes: Organic—Not defective. Tendinous—Knee-jerks diminished, but distinctly present. No difference in the two sides. No spasticity. Cutaneous—Plantar—no response, or occasionally a flexor response; no difference in the two sides.

Trophic symptoms absent; vasomotor symptoms absent.

Diagnosis.—Irritative lesion of the left psychomotor area, probably tumor; possibly a cyst or abscess.

Removal to hospital for further observation and probable operation was advised and the patient was taken to Cincinnati on Nov. 9, 1910.

Second Examination.—Nov. 10, 1910, Ophthalmoscopic examination by Drs. Robert Sattler and Victor Ray revealed no changes in the fundus. Blood examination by Dr. W. E. Schenck, on the same day, showed reds, 4,460,000; whites, 3,600; hemoglobin, 65 per cent.; color index, 0.74.

Differential count: Polymorphonuclear, 81; mononuclear (small) 10, large 5; eosinophils, 4; total, 100.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

[1] Acknowledgments are due and hereby tendered to Dr. Hannah for kindly contributing his personal notes and observations of the patient.

Diagnosis.—Secondary anemia.

Uranalysis (by Dr. H. L. Woodward): Color, amber; reaction, acid. Albumin, trace (probably due to fecal contamination; disappeared later).

OPERATION REPORT BY DR. KRAMER

First Operation.—Nov. 13, 1909, under ether anesthesia, an opening was made in the skull over the upper half of the left Rolandic area, two inches in diameter. There was no bulging of the dura and no pulsation visible. In the center of the operative field the dura was flattened and darker in appearance. Palpation revealed the presence of a circumscribed mass, harder in consistence than the surrounding cortex. The patient was not very strong before the operation and, as a result of the cranial resection there developed considerable shock. For this reason, the scalp was sutured and the removal of the tumor was delayed for a second operation, after the method of Sir Victor Horsley. After an interval of ten days the patient improved markedly in strength and on Nov. 23, 1909, the second operation was done.

Second Operation.—On opening the dura, we found a tumor imbedded in the brain, adherent to the pia mater, involving principally the precentral convolution and the Rolandic fissure (Fig. 1).

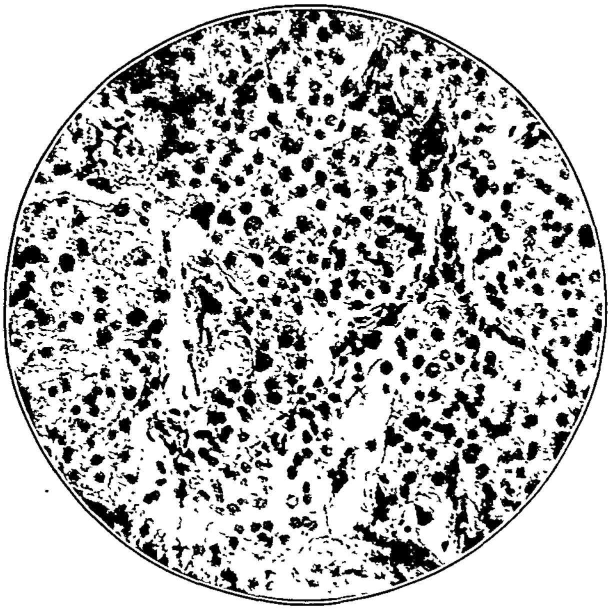

Fig. 2.—Photomicrograph of section of tumor (endothelioma).

The tumor was easily lifted from its bed in the brain, after severing a few slight adhesions to the pia mater. Hemorrhage was insignificant and there was but little shock. At the time of the second operation the brain pulsated very plainly as the result of the previous decompression. The tumor occupied the middle third of the left precentral convolution, growing downward and diagonally backward across the Rolandic fissure and displacing, but not invading, the postcentral convolution. The long axis of the tumor (55 mm.) ran across the Rolandic fissure, downward and backward.

Examination of Tumor.—The tumor was encapsulated, firm and resistant on palpation, presenting numerous small protrusions and cysts on its buried surface. It was not adherent to the dura mater. The tumor weighed 26 gm. and on section proved to be an endothelioma springing from the pia mater (Fig. 2).

The recovery from the surgical procedure was uneventful and the patient returned to her home eight days after the second operation.

Postoperative Notes (L).—Patient put to bed in good condition, conscious; improvement was steady. The hallucinations and delusions had disappeared on the second day. There was no "jerking" in the face, arm or leg. On the eighth day patient could move the paralyzed (right) leg, but could not stand alone. She could move the fingers of right hand, but had no use of it for any purpose. She was removed to her home (forty miles) on a traction car at this time. After arrival home she sat up daily in her chair. Dec. 20, 1909, twenty-seven days after final operation, she took a few steps, with assistance. Jan. 1, 1910, she walked alone across the room.

April 7, 1910, 4½ months after operation, she traveled forty miles on a traction car and called at my office for reexamination, when the following notes were made:

Height, 5 feet 1½ inches; weight, 96 pounds; no mental defect; no speech defect.

Motion: No "Jacksonian attacks," convulsions or unconscious attacks since the operation. Walks well; no defect of gait or station.

Power: Can close right hand, but cannot "register" on dynamometer (standard). Grasp in left hand registers 20 K. Moves right upper extremity freely at all joints, but has little use of hand; cannot oppose the thumb and fingers or make a "fist."

Some "silver-fork aspect" of right hand and wrist. The right shoulder droops slightly. The left sternomastoid muscle is weak, but competent in turning head.

Sensation: Good for tact, pain, heat and cold, everywhere in both hands and arms. Astereognosis *complete* of right hand, front and back, extending half way up forearm. Patient cannot recognize any difference between a pocket knife, finger, coin or wisp of cotton with hand. Half way up forearm on flexor surface she recognizes a silver half dollar as "hard and flat." Some sensory defect in sole of right foot, where cotton and a finger touch feel "the same," but recognizes a touch with a "stick" (toothpick). "Tickle sense" good in both feet.

Reflexes: Organic—No impairment. Tendinous—Knee-jerks slightly plus and equal. Ankle-clonus absent on both sides. Cutaneous—Plantar reflexes, flexor; the right less marked than the left. Oppenheim reflex absent.

Patient goes about the house and grounds daily and attends to personal needs so far as the defective right hand permits. She feels that she is gaining steadily and is cheerful and hopeful generally.

5 Garfield Place—4 West Seventh Street.

THREE CASES OF TUMOR IN THE CEREBELLO-PONTILE ANGLE *

JULIUS GRINKER, M.D.
Professor of Nervous and Mental Diseases, Chicago Postgraduate
Medical School; Assistant Professor in Clinical Neurology,
Northwestern University Medical School; Consulting
Neurologist to the Cook County Hospital, Chicago; Consulting Neurologist to the Cook
County Institutions at Dunning, Ill.
CHICAGO

Since the subject of tumor of the brain has ceased to have a mere academic interest, and has become the coveted point of attack of every progressive surgeon, reports of well-observed cases have become regular topics for discussion in neurologic and surgical gatherings. From the point of view of successful removal, next to neoplasms situated in the Rolandic area, tumors growing in the angle between cerebellum and pons offer the greatest possibilities for success, and this for two reasons: First, thanks to the labors of modern physiologists and clinicians, the localization of tumors in this region has become comparatively easy; second, the surgical technic has reached a high degree of perfection.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

When, therefore, a diagnosis can be made early and a skilled surgeon is at hand, a perfect result should be obtained in those cases in which the tumor is at all removable. Nevertheless there will always remain a large number in which removal is impossible, either because the tumor is too large, or because it belongs to the infiltrating variety.

Being of the opinion that our failures are sometimes more interesting than our successes, and also that statistics which exclude unsuccessful cases are fallacious, I am reporting three cases of tumor in the cerebello-pontile angle in which the diagnosis was correct, but which were nevertheless failures, if by success we mean with Charles K. Mills not only exact localization, but also the successful removal of a tumor, and at least partial success as regards removal of the disease.

As the entire subject of cerebellar and cerebello-pontile angle tumors has been ably reviewed by Mills, Frazier, Weisenburg and Frenkel,[1] also by Harvey Cushing,[2] and quite recently by Risien Russell,[3] I refer the reader to these authors for a complete account of the varied symptomatology of these neoplasms.

The interest in my report being centered in the cases themselves, I shall follow each case with some general remarks.

CASE 1.—*Patient.*—A. B., aged 24, single, clerk, with negative family and personal history, was first seen by me Dec. 28, 1905. His brother, a physician who accompanied him, stated that, though physically always in good health, the patient has been considered nervous since childhood. At an early age he had suffered from night terrors and even at the time of examination he regularly appeared dazed and confused on awaking in the morning. He was a moderate drinker and smoker and had never acquired syphilis.

Present Illness.—In August, 1905, the patient felt a weakness in the left leg and somewhat later in the left arm, the face was not involved. In the following September he began to suffer from occasional headaches of moderate severity, which were always diurnal, aggravated by physical exercise and localized in the frontal region and the nape of the neck. At about the same time transient attacks of dizziness appeared whenever he rose suddenly from the recumbent posture. Soon thereafter vision began to fail, the eyes were blurred and attacks of blindness occurred, which on passing off, left black spots in his visual fields. Accompanying the disturbances of sight were attacks of dizziness, but never nausea or vomiting. Of irritative motor phenomena the patient described peculiar jerkings and twitchings of the chest muscles, especially marked during excitement. During the month preceding this examination he had been almost constantly tired, the slightest exertion brought on extreme fatigue and sleep was not refreshing, vision had been failing rapidly and the gait showed some staggering to the left. While these symptoms were developing two ophthalmologists were consulted. Each discovered a papilledema and suggested neurologic treatment. The next physician in attendance pronounced the case a functional neurosis. The brother, not satisfied with the diagnosis, brought the patient to my office Dec. 28, 1905, about a month after the previous consultations.

Examination.—This revealed a well nourished young man of average weight and height, whose viscera were normal, pulse regular and 72 beats per minute. Paralysis of any kind was not apparent. Though the left half of the face seemed somewhat relaxed while at rest, yet when the patient was speaking and performing the usual motor tests nothing abnormal could be detected. The left hand grasp was somewhat weaker than the right and the left leg showed a slight degree of weakness when made to move against resistance. The gait was somewhat uncertain and slightly ataxic, with a tendency to reel more often to the left than to the right.

Cranial Nerves.—The olfactory nerves were not involved. The optic nerves showed choked disk and beginning atrophy, in consequence of which vision was markedly reduced. The pupils responded somewhat sluggishly both to light and in accommodation. Nystagmoid jerking appeared when the eyes were directed in extreme lateral positions. The third, fourth and sixth nerves were not involved. When first examined patient made no complaint of paresthesia in the region of the left trigeminus nor was anything found objectively. Two months later, however, corneal areflexia was distinct and analgesia pronounced in the same region. With the exception of a slight degree of relaxation the left seventh nerve appeared normal. A systematic examination disclosed the existence of nerve deafness unknown to the patient and limited to the left side. The cranial nerves from the ninth to the twelfth, inclusive, were not in the least affected.

Reflexes.—All the superficial reflexes were present and of about normal intensity. The deep reflexes in upper and lower extremities were markedly exaggerated, more so on the left side; ankle clonus, Babinski, Oppenheim, or Gordon signs were not obtainable.

Coordination.—Slight static and dynamic ataxia was present in the lower extremities. When each leg was tested separately the greater degree of incoordination was found in the left. The finger to nose test showed marked tremor in the left hand—more of an ataxic than an intention tremor. Cerebellar asynergy in trunk and lower extremities was absent, likewise Babinski's adiadokokinesia sign.

Diagnosis and Treatment.—My diagnosis was tumor in the left cerebello-pontile angle. Immediate operation was recommended with the expectation of saving what was left of patient's vision. The brother having charge of the case successively engaged three surgeons, who performed a number of operations within a period of about two months. The first surgeon trephined over the left cerebellum, but, on discovering the presence of pulsation and no tumor, he replaced the bone and closed the wound. One week later the same surgeon attempted a ventricular tapping but found no fluid. About two weeks later another surgeon was consulted, who also trephined over the left cerebellum. After an unsuccessful search in the region of the left angle he concluded the operation by decompressing the right subtemporal area. Meanwhile the patient had become completely blind. This circumstance caused me to discourage further operative undertakings. Nevertheless, a third surgeon was found who reluctantly yielded to the brother's request to make a new hunt for the elusive tumor. Again the left cerebellum was uncovered and the left cerebello-pontile angle explored. The operation was a bloody one and lasted several hours. In spite of a profuse hemorrhage, which dictated a discontinuance of the operation the surgeon was urged on to continue at any cost. At last his persistence was rewarded by finding a neurofibroma, which he thought probably originated in the sheath of the left acoustic nerve. Because of the patient's precarious condition it was possible only to remove a part of the tumor, namely, a piece the size of a cherry. The surgeon concluded the operation by making subtentorial decompression over the left cerebellum.

Subsequent History.—Recovery from the operation was uneventful and the patient became free from headache and dizziness, but the tumor symptoms were even more numerous and more pronounced. To mention them only, there were adiadokokinesia, reeling gait, left sided motor weakness, optic atrophy, left corneal areflexia, complete paralysis of the sensory trigeminus and left sided deafness. The patient's condition remained practically the same until the middle of September, 1909, when severe headaches made their appearance. These resisted all forms of medication, and surgical treatment was again considered. Dr. Allen B. Kanavel with whom consultation was had, favored a cautiously performed lumbar puncture rather than a ventricular tapping, being fully aware that such procedure has been condemned in tumors of the posterior fossa. A small quantity of spinal fluid was removed, but this sufficed to give immediate relief from headache, the patient was again able to be about as before. Unfortunately this remission was of but short duration for the end came unexpectedly on Dec. 2, 1909. While the patient was conversing over the telephone he had a peculiar seizure, in which he fell backward, striking the ground with his head and becoming unconscious. Coma supervened and he died within two hours after the fall.

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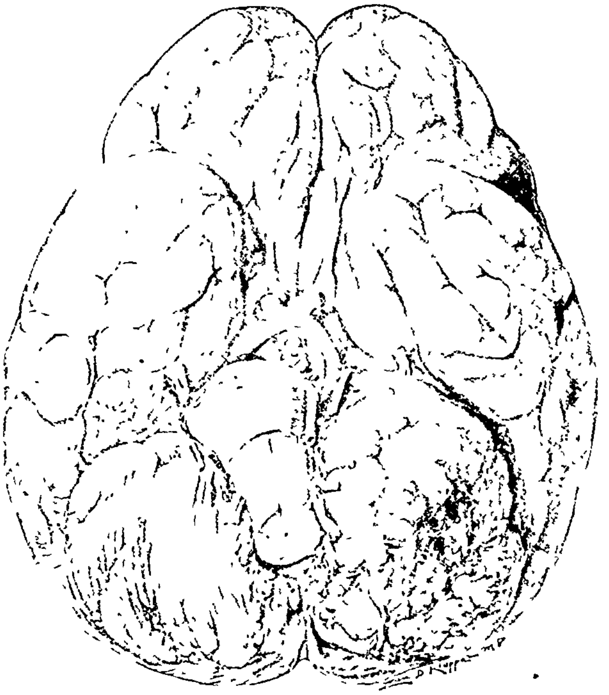
[1] New York Med. Jour., Feb. 11, 18 and 25, 1905.

[2] Cushing, Harvey: Boston Med. and Surg. Jour., clxi, No. 31, p. 71; Interstate Med. Jour., September, 1909.

[3] Russell, Risien: Brit. Med. Jour., Feb. 19 and 26, and March 5, 1910.

Post-mortem Examination.—Owing to delay in obtaining permission, the brain could not be examined until eighteen hours after death, which, of course, was fatal to the application of the finer neuroglia stains. Macroscopically the brain presented two hernial protrusions: one situated over the right subtemporal region, probably the result of a decompression operation; the other hernia was seen over the left cerebellum, the site of several operations. In my attempt to remove the brain from the cranial cavity I ruptured a cyst containing about six ounces of fluid blood, evidently a recent hemorrhage. The cyst-wall was adherent to the petrous portion of the left temporal bone and constituted a part of the hernial protrusion over the left cerebellum. After hardening the brain in formaldehyd solution neurologic frontal sections were made. With the exception of bilateral internal hydrocephalus, more marked on the right side, nothing pathologic was discovered in the cerebrum. The hydrocephalus was probably the result of obliteration of the foramen of Magendie and of the foramina of Luschka. The conspicuous pathologic condition was in the cerebellum. The entire left hemisphere was occupied by one large mass of denser consistency, but not of different configuration from the normal cerebellum, encroaching somewhat on the structures of the right half (see illustration). A horizontal section through the entire left half of the cerebellum revealed a surface of mottled appearance, strongly suggestive of old and new hemorrhages. Microscopically the sections showed parts in which dense networks of fibrillar ground substance were in close relation with numerous polymorphous cellular elements, varying in size from the small round cell to the long spindle-shaped cell, each containing a granular nucleus. In other parts of the sections could be seen islets of round cells of varying size with scarcely any intervening intercellular substance. In addition there were noticeable throughout the tumor mass numerous vessels of varying caliber. The mottled appearance, previously observed with the naked eye, under the microscope proved to be irregularly scattered hemorrhages of various sizes and ages. For the microscopic sections I am greatly indebted to Dr. C. D. Hauch, and also Prof. F. R. Zeit, in whose laboratory they were prepared.



Enormously enlarged left half of cerebellum, pushing pons-medulla over to the right and containing large glioma.

Pathologic Diagnosis.—Because of the presence of areas resembling sarcoma, and of others corresponding to the appearances of glioma, the diagnosis presented difficulties. There are those who call such tumors gliosarcomata, while others think that this term is merely a cloak for our ignorance. It cannot be denied that rarely both epiblastic and mesoblastic formations may occur in the same tumor, but I incline to the view that most of those reported as gliosarcomata have been either gliomata or sarcomata. It is generally believed that glioma in its varied metamorphosis is capable of producing pictures like sarcoma. The preponderating appearance of my specimen was like that found in glioma; besides, the growth did not overstep physiologic and anatomical boundaries. My diagnosis was glioma cerebelli. In the discussion which ensued on my presentation of the brain with microscopic sections in the joint meeting of the Chicago Pathological and the Chicago Neurological Society, this diagnosis received substantial support.

COMMENT

It is interesting to note that in this, as in many another neurologic case, the ophthalmologists were the first to call attention to the brain as the probable seat of the lesion in a supposed affection of the eye; further, that neurasthenic symptoms had at one period so overtopped the underlying basic trouble that an experienced physician had made the diagnosis of neurasthenia four weeks prior to my seeing the patient, at a time when tumor symptoms must have been present. Another point worth noting is the unusual beginning of the trouble with weakness in the left leg and arm, a weakness which corresponded to the asthenia of Luciani, and was not the result of a motor paralysis, there having been neither disability nor spasticity and pathologic reflexes. The case began, then, with asthenia confined to the left side, without any known cranial nerve disturbances—unless nerve-deafness had existed for some time, of which the patient had no knowledge. Then followed headache, dizziness, and visual disturbances, all general symptoms of brain tumor. Later still came cerebellar incoordination and only after several operations had been performed was trigeminus anesthesia noted.

A retrospect of the surgery in this case brings out the following important points:

1. The presence of pulsation does not necessarily mean an absence of tumor underneath.
2. Once a tumor patient has become blind and his other symptoms, such as severe headache, vomiting and vertigo, are not troublesome, a radical operation may possibly verify a doubtful diagnosis, but is of no service to the patient.
3. A knowledge of the previous point should lead to the performance of "decompression" before blindness has occurred.
4. The much-dreaded lumbar puncture in tumors of the posterior fossæ may occasionally prove beneficial in the hands of those who exercise due care in preventing a sudden escape of the spinal fluid. In this case the removal of only about an ounce of cerebrospinal fluid was sufficient to relieve a headache which resisted all other treatment.

In respect to the discrepancies existing between the ante-mortem pathology, which showed a neurofibroma, and the post-mortem findings, which revealed a glioma, two possibilities must be considered. Either the glioma, which, it will be recalled, contained areas resembling sarcoma, developed since the operation and grew into a previously existing sarcoma—the latter a malignant transformation of remaining fibroma tissue—or else the portion of tumor removed at operation was not a fibroma. Not having seen the first specimen, but having carefully examined the post-mortem sections, I incline to the view that the tumor was a glioma from the beginning.

Equally uncertain is the exact origin of the hemorrhagic cyst. It is quite possible that the fall which occurred when the patient was standing at the telephone was entirely accidental and the cause of the large hemorrhage which produced death by suddenly compressing the medulla. It is more probable, however, that the large hemorrhage was spontaneous and orginated in the same way as did the other numerous large and small hemorrhages, which were not sufficiently extensive to press on the pons-medulla and thereby to cause death. Neither the macroscopic nor the microscopic examination, however, threw any light on this question.

As for the internal hydrocephalus, its occurrence has been frequently noted in tumors of the cerebellum and the cerebello-pontile angle, and has been attributed either to agglutination of the foramina connecting the fourth ventricle with the subarachnoid lymph-spaces, or else to the compression by the tumor of the veins of Galen, preventing drainage of the interior.

Case 2.—*Patient.*—Miss A. C., aged 26, bookkeeper, consulted Dr. R. C. Pattillo in the spring of 1905 for an affection of the eyes. He discovered a refractive error requiring correction with lenses. These having been prescribed, the patient was placed in the care of Dr. Frederick Menge for the treatment of peculiar sensory troubles in the face, presumably caused by antrum disease. Repeated examinations by Dr. Menge failed to disclose the existence of either antrum or sinus disease. The patient was returned to Dr. Pattillo, who made several ophthalmoscopic examinations, and, finding the optic disks normal and no other ophthalmic lesion, concluded that the case required neurologic treatment. Through his courtesy I saw the patient for the first time in July, 1905, and obtained the following history:

History.—The family record, though not of the best, was free from nervous and mental disease, nor could I discover a history of tuberculosis or neoplasm. The patient, never very robust, had always been well until added responsibilities had of late caused a "nervous breakdown." She stated that within the past three months she had developed attacks of sudden blindness, which were momentary in duration and most often occurred when she was recumbent. Though these symptoms at first alarmed her, she continued at work until more troublesome visual disturbances appeared in the form of mists or clouds rising before her eyes, which temporarily obscured her vision while at her books. After a series of these attacks she was obliged to take a few days' rest, but she regularly returned to her work thereafter. A complaint to which she paid little heed, but which had persisted several months before the eye symptoms became prominent, was a peculiar heaviness and pressure feeling, with an occasional sharp pain in the left cheek, often radiating into the left eye. Not infrequently she experienced sensations of "grittiness" in both eyes, followed as a rule by an irresistible desire to sleep. While eliciting this history I discovered marked deafness in the patient's left ear, which, she explained, had come on gradually after more or less constant ringing had persisted in that ear for several months. And finally she laid particular stress on the existence of a feeling of fatigue, especially on rising in the morning, complained of general nervousness and dull headaches, and also of occasional numbness in the finger tips.

Examination.—The patient, an intelligent young woman, of about 26, appearing rather nervous and somewhat depressed, recited her story in great detail and gave it the coloring of the hysterical. A physical examination disclosed normal viscera. Motor paralysis was nowhere discernible, nor could twitching of muscles be seen anywhere. Gait and station were normal. The sensory examination revealed slight hypesthesia over the entire left half of body, including the face. Superficial and deep reflexes were all normal, with the sole exception of some reduction of the conjunctival and corneal reflexes on the left side. The pupils responded well to light and in accommodation. The optic disks were neither congested nor pale; in fact, they appeared typically normal. Hearing was completely abolished in the left and normal in the right ear. Additional findings were: A point of tenderness over the vertex, several such points over the spine and a hypersensitive spot in the left ovarian region. As the symptoms, both positive and negative, were those frequently encountered in functional nervous disease, and as none of the objective signs appeared to me definitely characteristic of organic disease, I diagnosed hysteria and treated the patient accordingly. She visited me several times, seemingly improved at first, but not so during the last two or three visits.

Subsequent History.—In the middle of September, 1905—six weeks after my first examination—the patient entered my office staggering and in a state of alarm. With great consternation she related to me that, as she was crossing the street, she became dizzy, staggered, and everything appeared black to her. It was marvellous, she said, that she escaped being killed, having become blind while crossing the busy thoroughfare. Her sight had gradually returned, but she feared a recurrence of the attack. She also informed me that two days previously she had suffered intense headache, had developed dizziness and had vomited several times. Never before had the last-mentioned symptoms been in evidence. Her gait had become ataxic—a reeling from side to side. The ophthalmoscopic examination revealed to me, for the first time in this case, extreme bilateral choking of the disk.

Diagnosis.—The advent of such symptoms compelled a revision of the diagnosis. Everything suddenly appeared clear to me: The deafness, having come without antecedent local cause and having been preceded for months by tinnitus aurium, could now be readily explained by pressure on the acusticus. And similarly, the paresthetic disorder in the left half of the face, which had given rise to the suspicion of antrum disease, could easily be ascribed to pressure on the trigeminus. The frequent and peculiar visual disturbances, in spite of the presence of normal disks in the early history of the case, could be accounted for by transient attacks of edema. Of course, with the appearance of headache, vomiting and vertigo, added to the cerebellar gait, in a patient who had had acusticus and trigeminus involvement, the diagnosis of tumor in the cerebello-pontile angle on the side of the cranial nerve lesions became almost a certainty.

With this diagnosis and the advice to operate immediately, the patient was returned to her family physician. Two weeks later a two-step operation was performed over the cerebellum, during the progress of which the diagnosis was verified, but the patient died. Consent was not obtained for a post-mortem examination.

COMMENT

In this, as in the preceding case, eye symptoms were among the earliest to attract attention. Paresthesia in the left trigeminus, though antedating the visual disturbances by several months, failed to impress the patient with its seriousness. Likewise, a deafness which was complete—discovered during a routine examination—barely received mention on the part of the patient. To her the visual and neurasthenoid symptoms were of far greater importance, and by manner and statement she succeeded in impressing her physician with a similar belief. This may perhaps explain why manifestations which were unmistakable local signs of tumor in the cerebello-pontile angle, did not receive due consideration until the general symptoms of brain tumor appeared. Further, this case helps to support the following conclusions:

1. Unilateral sensory disturbances, be they ever so slight, should arouse a suspicion of organic disease, because these are not invariably the result of functional neurosis.

2. The focal signs of neoplasm of the brain, and particularly of that growing in the cerebello-pontile recess,

often precede the general symptoms by a considerable period of time.

3. Choked disk may occur late, but rapidly, in tumors of the posterior fossæ.

CASE 3.—*Patient.*—C. T., a woman, aged 55, entered Cook County Hospital on Nov. 26, 1909, in the service of Dr. G. W. Hall, by whose courtesy I am reporting this case. A few days after her admission I made an examination and learned that the patient, whose family and personal history were negative, had been well until about six months previous. At that time she developed dull headaches, which came at irregular intervals, each attack usually lasting several hours. Their localization was principally over the right fronto-parietal region and occasionally over the occiput. Soon after this symptom there appeared more or less constant dizziness, which was always aggravated by the upright posture and by sudden rising from recumbency. Following this, came ataxia of a type which caused the patient, unless supported, to reel and fall mostly to the right, but occasionally to the left and forward. The aforementioned symptoms were rapidly succeeded by attacks of nausea and projectile vomiting having no relation whatever to the ingestion of food. From the beginning of her illness vision had been gradually failing, but she could still read newspapers six weeks before admission; from that time on her sight had deteriorated rapidly, so that at this examination she could only count fingers. An additional complaint was, that six months previously she had developed what was considered a "stroke" on the right side, which left some weakness on the same side.

Examination.—The patient, a well-nourished woman of about 55 years, walked slowly, with short steps, her gait presenting a good example of the intoxicated, but not that of one suffering from past or present motor paralysis. The facial musculature appeared somewhat relaxed on the right side, although on inspection no definite paralysis was detectable. On the application of the usual tests I discovered no noticeable inequality in wrinkling the forehead, but winking was less frequent on the right than on the left side; further, in a voluntary attempt to raise the upper lip, the right half was somewhat retarded, and puckering of the lips as well as whistling seemed impossible. The tongue, when protruded, deviated markedly to the right and the mucous membrane of the right half was thrown into folds, giving the typical appearance of lingual hemiatrophy. With the exception of distinct paralysis of the right external rectus, the ocular muscles showed no anomalies beyond a slight nystagmus, slow in character and most marked when patient looked to the extreme right. The pupils were dilated and responded but faintly to light and accommodation. Vision was reduced to finger-counting. Involvement of the trigeminus was manifest by the presence of hypesthesia and hypalgesia in its entire distribution, including cornea, conjunctiva, nasal and oral mucous membranes. Hearing was entirely abolished in the right and slightly below normal in the left ear. At this point it is well to state that about twelve weeks before entrance an incision in the right external auditory meatus had been made, which resulted in a chronic purulent discharge from that ear. The reason for such treatment was not ascertainable.

Reflexes: The corneal and conjunctival reflexes were absent on the right, present on the left side. Epigastric and abdominal reflexes were not elicitable on either side. Masseter, supinator, biceps, triceps, knee and Achilles tendon reflexes were present bilaterally and were of normal intensity.

Sensation: This was nowhere impaired, except in the right trigeminus distribution.

Coordination: There was undoubted incoordination of both station and locomotion of the variety described as cerebellar: a tendency to fall sidewise when standing or walking, which was not aggravated by closure of the eyes. The cerebellar symptom described by Babinski under the term adiadokokinesia was present and well-marked; the patient was unable alternately to pronate and supinate the right forearm, but could accomplish these movements readily with the left.

The viscera were all normal; likewise the blood and urine, which were frequently examined. A Wassermann test, kindly made for us by Dr. Frederick Harris, proved negative.

Diagnosis.—This was easy in the presence of the many general and local symptoms of brain pressure as found in our case. In addition to the general symptoms of brain tumor, such as headache, nausea and vomiting, bilateral choked disk, there was nystagmus and cerebellar ataxia, which latter symptoms enabled localization in or about the cerebellum. Further, the implication of the trigeminus, sixth, seventh, eighth and of the twelfth nerves on the right side, was sufficient to localize the neoplasm more definitely. When I presented the patient in my Cook County Hospital clinic, I made the diagnosis of rapidly growing tumor in the right cerebellopontile angle, and suggested immediate operation.

Operation.—Dr. Schroeder, of the Cook County Hospital staff, performed the operation on Dec. 17, 1909. A large tumor mass was discovered in the right cerebello-pontile recess, which he considered irremovable. He contented himself with making cerebellar decompression and then closed the wound.

The patient made a good recovery from the operation, but died a few days later—December 27—from the effects of facial erysipelas. Post-mortem examination was refused.

COMMENT

There could have been no difficulties in the diagnosis of a case so rich in classical symptomatology as this one. Only the unusual features therefore will be touched on.

The headache, it will be recalled, was principally in the fronto-parietal region and only occasionally in the occiput, its usual place of election. Had there been no other symptoms, this might have caused confusion in the mind of the examiner and would have created a doubt as to location. It must be recollected, however, that the situation of a headache has but limited localizing value and that in many cases of cerebellar tumor the headache has been entirely frontal.

A symptom which still constitutes a topic of lively debate among neurologists is the muscular weakness occurring in cerebellar and cerebello-pontile angle tumors, some maintaining that it is a real motor paralysis and the result of motor tract involvement, others assigning to it a purely cerebellar cause and explaining it as a sign of cerebellar asthenia. To the latter group of men belongs Luciani, who described three symptoms as characteristic of a cerebellar lesion produced experimentally, namely, atonia, asthenia and abasia. Clinicians have found this triad of symptoms in disease of the cerebellum, and particularly in tumor of that region.

In my last case a diagnosis of cerebral hemiplegia had actually been made because of a rather sudden appearance of right-sided weakness combined with facial involvement. Had the type of facial paresis been investigated, it would have been found to belong to the peripheral-nerve variety, the upper branch being implicated. The absence of pathologic reflexes in the extremities presumably paralyzed, and the uncrossed character of the asthenia—being homolateral with the several cranial-nerve lesions—negatived the diagnosis of hemiplegia and favored that of cerebellar asthenia on the same side as the tumor.

100 State Street.

Multiple Exostoses.—A boy aged 4, when 18 months old, developed symptoms which were attributed to left hip-disease. He was treated with a Thomas' hip-splint for two and a half years. He was then brought to the hospital with a supposed fracture of the forearm. The deformity and limitation of movement at the elbow were found to be due to an exostosis growing from the radius. The patient had numerous exostoses growing from scapula, ribs and ends of long bones.—Harold Burrows, *Proc. Roy. Soc. Med.*, July, 1910.

THE TOPOGRAPHIC DIAGNOSIS OF SUBTENTORIAL BRAIN TUMORS *

HERMAN H. HOPPE, A.M., M.D.
Professor of Neurology, Medical Department University of Cincinnati; Neurologist to Cincinnati Hospital
CINCINNATI

TOPOGRAPHIC DIAGNOSIS

The question as to whether or not we shall operate for tumors in this region, and if we operate, whether the operation shall be radical or palliative, can be decided only by an accurate topographic diagnosis. The subject of differential topographic diagnosis is therefore of prime importance. Surgical intervention is dangerous, or not, in the cerebellar region *in direct ratio to the* amount of exploration, handling and bruising to which the cerebellum is subjected. Moreover, if we know, from the location of the growth, that the chief disturbance produced is by an internal hydrocephalus, as in Case 1, the nature of the surgical interference will be different from that which is indicated if the growth itself, by local pressure, is threatening the life of the patient. More accurate topographic diagnosis will not only enable us to be more precise in advocating or refusing to advise surgical intervention, but it will enable us to say whether the suboccipital or subtemporal region *is to be the seat of the operation*, and, if suboccipital, which side.

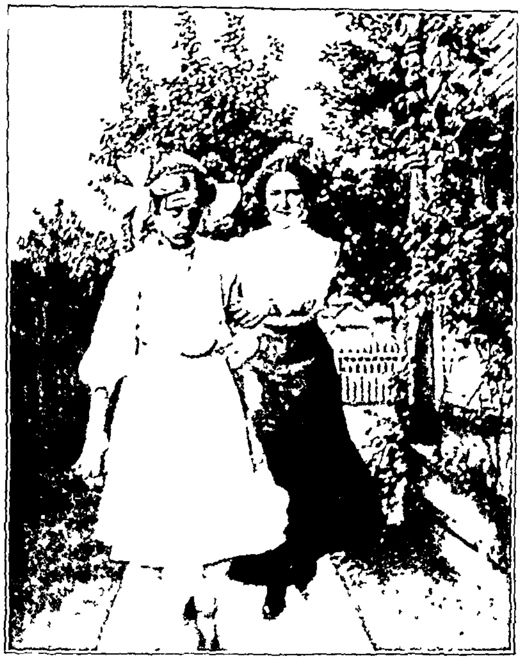


Fig. 1, Case 2—The photograph illustrates paralysis of right external rectus, right facial, and left sided hemiataxia

Have we signs sufficiently positive to enable us to say that a growth is in the brain-stem, in the cerebello-pontine angle or intracerebellar, and if the latter, on which side it is located?

The cerebral surgical triumphs of the last decade have been achieved in relieving cysts and tumors of the cerebellum itself, and those of the cerebello-pontine angle. The diagnosis of the latter growth, as we shall see, is comparatively easy. It is the chief object of this paper to analyze the signs and symptoms which indicate a lesion of the cerebellum itself. I shall assume that such a localization can be arrived at *only by* exclusion, and I shall therefore briefly state the history of cases, in which there were illustrative lesions, which must be excluded in the topographic diagnosis of intracerebellar growths.

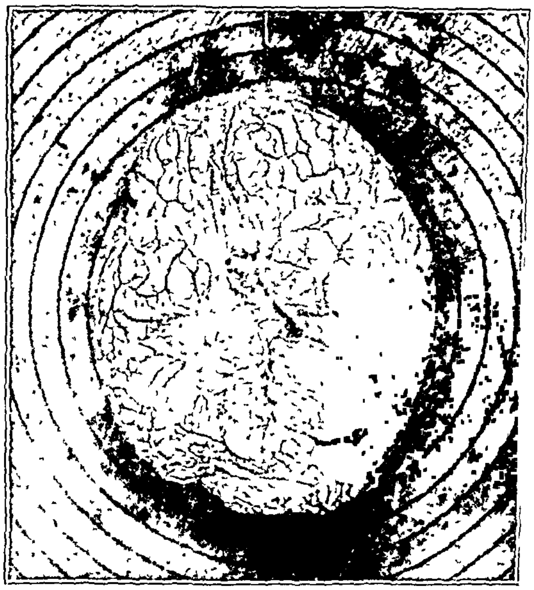


Fig. 2, Case 3—Typical tumor of the left acoustic nerve in the left cerebello-pontine angle.

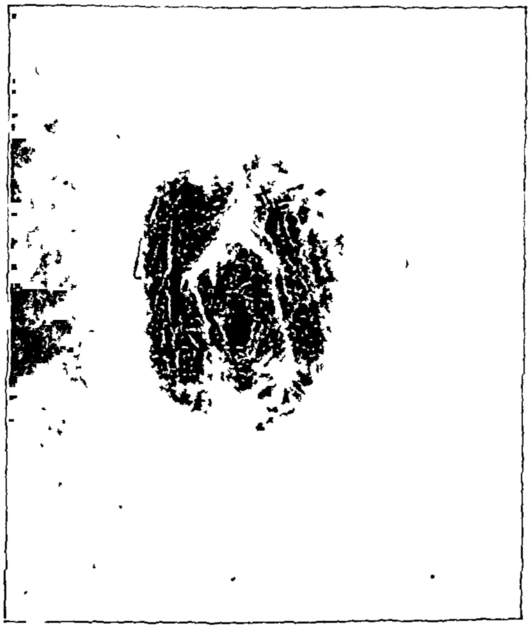


Fig. 3, Case 6—Tumor of the right frontal lobe simulating a cerebellar symptom-complex

TUMORS OF CORPORA QUADRIGEMINA

The first case to which I shall call attention is typical of tumors of the region of the corpora quadrigemina. I shall give but a brief outline of the history, because the case itself will form the basis of a future paper.

We have here a typical case which illustrates the syndrome of tumors of the corpora quadrigemina: Paralysis of the external eye-muscles, involvement of both eyes, inability to turn eyeballs upward, ability to turn them down, pupillary paralysis, ptosis of both lids, blindness, incoordination of gait, some staggering static ataxia; no loss of sensation or of motor power in the extremities. The only discordant note is that deafness is often associated with lesion of the corpora quadrigemina, but in our case hearing remained normal. The other unusual feature is the extreme ataxia which came on toward the end. Patient when in bed used arms and legs freely but was unable to stand at all on account of the ataxia, and showed marked retropulsion on attempting to walk. Intention tremor, athetosis and nystagmus were absent in this case. The autopsy showed that the tumor was practically limited to the corpora-quadrigeminus region.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St Louis, June, 1910

* For reasons of space, part of this *article is omitted from* THE JOURNAL The complete article appears in the Transactions of the Section and in the author's reprints.

TUMORS OF PONS

Tumors of the pons offer quite a different syndrome from that of the tumors of the region of the corpora quadrigemina as the following case will illustrate:

CASE 2.—*Patient.*—C. W., aged 12, school-girl. Family history was negative. There was no tuberculosis in the immediate family. Patient was well up to four months ago. Onset of trouble was marked by a slight defect in the right eye; patient saw double; at times had some fever; headache occasionally at first; later, more frequent, and just previous to the time she was first seen had attacks of vertigo, and staggered; had vomited every morning. No defect of hearing.

Examination.—At the time of examination the mental condition was normal; pupils equal and responded to light; optic disks normal; there was paralysis of both internal and both external recti muscles; the eyes could be moved upward and downward; paralysis of the right facial, both upper and lower branches; right eye could not be closed. The tongue deviated to left; arms were normal in all respects; in the right leg the patellar reflex was practically abolished; left patellar reflex exaggerated; left ankle-clonus, bilateral Babinski sign; no weakness in legs; hearing normal; when eyes were closed patient walked with a staggering gait, with a tendency to turn toward the left. There was no static ataxia, no ataxia in recumbent position.

Course of Disease.—Two weeks later the condition remained the same, but a horizontal nystagmus had been developed, on looking to right. After four weeks there developed an ataxia of both arms, without any loss of muscular power; with blindfolded eyes patient could not walk forward at all, but invariably was forced toward the left. She staggered to left when walking, and fell to left in Romberg test. Hearing had become defective in the right ear, both to bone and air conduction. Papillæ remained normal; left eye movement upward somewhat diminished; left patellar reflex had returned and both were now exaggerated.

May 24, 1910, mental condition was good; optic discs normal; eye muscles as before; paresis of soft palate; patient choked on swallowing. Right side of face remained unchanged; no loss of sensation anywhere; no areflexia cornea. Speech was difficult; dysarthria was present; patient developed some weakness, but a very acute ataxia of the left side, both arm and leg; adiadokokinesia of the left arm was marked; patient was unable to walk without assistance on account of the left-sided ataxia. Ankle-clonus was present on the left side; exaggerated patellar reflexes.

This case presented the typical history of an infiltrating tumor of the pons. The damage wrought is caused by a gradual destruction of the various nuclei and structures of the pons, partly by invasion, partly by compression.

The symptoms are chiefly bilateral; viz., bilateral involvement of the eyes, bilateral ataxia of the arms, bilateral increase of the patellar reflexes, but the involvement of the seventh and eighth on the right side, paresis of the left leg with ankle-clonus on the left side and ataxia of left arm and leg later on, shows the typical condition of pontine and medullary growths, viz., paralysis alternans.

TUMORS OF CEREBELLO-PONTINE ANGLE

And now let me call attention to tumors of the cerebello-pontine angle. The typical tumor here is of very slow growth, usually a fibroma or endothelioma, growing from the trunk of the auditory nerve; but the seventh and fifth may also be the seat of origin. The typical early syndrome is that of defective hearing on one side, gradually increasing, with occasional attacks of vertigo, with loud noises and ringing in the ear; then the general symptoms of headache, vomiting, vertigo, unsteady gait, plus more or less pronounced involvement of the fifth, sixth, seventh and eighth cranial nerves, on one side, with perhaps an indication of ataxia of arm or leg on the same side, and finally, signs and symptoms which point to a compression of the medulla and pons. This syndrome is so typical that in the majority of cases the localizing diagnosis is easy. Let me here introduce a typical case:

CASE 3.—*Patient.*—R. M. R., aged 49, examined July 9, 1908. Father of four children; superintendent of Normal school, state of Kentucky; patient of O. L. Smith, Lexington, Ky. He had had meningitis (?) when 9 years old; no venereal diseases; influenza yearly for five or six years; had been partially deaf in the left ear for the previous six years. Dr. Smith wrote that in March, 1907, patient had "some contraction of the field of vision, occasional sinistral hemianopia, dextral arm and leg numbness, and inability to nominate with his usual facility." Patient stated that for the previous year he had had occasional attacks of vertigo and could not see out of the temporal half of the left eye; that he could not hear well with his left ear. He staggered at times, but to no special side; lost confidence when he attempted walking in the dark.

Examination.—Mental condition, memory and speech normal; left pupil somewhat larger than the right; both responded to light and accommodation; no choked disk; some weakness of internal rectus of right eye and external rectus of left; horizontal oscillations of eyeballs when turned to extreme left, but no typical nystagmus. The patient could not hear well in left ear, but bone conduction was normal. Sensation in the facial region was normal; reflexes of cornea normal. No loss of function in regions supplied by the other cranial nerves. Sensation, muscular power and reflexes of the extremities normal; no ataxia in upper or lower extremities.

Diagnosis.—No positive diagnosis could be made; neoplasm suspected.

During his vacation patient noticed that his gait was slightly ataxic. In October and November, 1908, he suddenly fell on two occasions. His legs simply gave way under him; was able to arise unassisted and go on with his work.

Feb. 10, 1909, patient stated that he had some headache and vertigo in the fall of 1908; that he was unsteady on his feet and staggered occasionally as if drunk. Six weeks prior to above date he had a sudden onset of violent headaches and vomiting. This continued since; patient was confined to bed and treated for uremia.

Examination.—Patient had not been able to walk without support, and when put on his feet staggered and fell to the left. He was very weak; pulse 96; vomited constantly, and had violent headaches. Pupils reacted to light. Patient had very marked choked disks, but could see well; stated that vision in left eye became blurred occasionally; weakness of internal rectus of right eye and external rectus of left eye; horizontal wavering of eyeballs when turned to the left. (Nystagmus?). He showed a tendency to lie on left side; gait weak and staggering, and fell to the right; no typical cerebellar gait. Nasolabial fold seemed less marked on right side than on the left. No ataxia of the arm; right arm normal in muscular power; the right leg was perhaps a little weaker than the left; urinalysis negative.

Course of Disease.—For two weeks patient stopped vomiting, then vomited occasionally. Seemed much improved on treatment of iodid of potassium. No new symptoms or signs developed for six weeks.

April 5, 1909: Rapid increase, rather suddenly, of weakness in the legs, when put on feet, fell to the right and dragged the right leg. Reflexes of legs exaggerated, had suddenly developed bilateral ankle clonus and slight patellar clonus, plantar reflex normal on both sides, no disturbance of sensation, no ataxia in the recumbent position, no weakness of arms, other signs and symptoms remained as before, except pulse, which was very weak, 120 per minute.

Diagnosis.—Cerebellar tumor, probably on the left side. Dr. Ransohoff was called in to operate. Dr. Zenner also saw the case.

Operation.—On account of the weakness of the patient, it was decided to do a typical subtemporal decompression on the right side, rather than take the increased risk of perhaps a bilateral suboccipital operation. The bulging of the dura was enormous, dura opened and pulsation in brain reestablished, patient left operating room barely alive, on account of cardiac weakness. Twenty-four hours after operation patient suddenly developed a typical tachycardia, pulse 240 beats per minute at heart, irregular, no radial pulse. This condition yielded to stimulation and subcutaneous infusions of salt solution, pulse returning to 108. The bilateral ankle clonus disappeared, headache and vomiting ceased, and patient became comfortable.

Subsequent Course.—On third day paralysis of the pharynx was noticed and up to his death patient was unable to swallow. On the fifth day patient had a convulsion, suddenly lost consciousness, became rigid all over, head thrown back in opisthotonus, radial pulse lost, tachycardia again persistent, respiration suspended, marked asphyxia. Patient recovered consciousness and seemed fairly well with the exception of the paralysis of the pharynx. In twenty-four hours he had a second attack of convulsions, this was followed by tachycardia and quick, shallow respiration. There was a ptosis of the right eyelid, loss of corneal reflex, corneal ulceration on the left eye, no loss of sensation in the left side of face. There was paralysis of the right arm and right leg, and perhaps of the left leg; death.

Autopsy.—This was made three hours after death. The cerebrum was dry and apparently completely drained of cerebrospinal fluid. There was more fluid below the tentorium cerebelli. On removing the tentorium, a tumor, the size of an English walnut, was found partly attached to the petrous portion of the temporal bone, loosely adherent, but apparently growing from the left acoustic nerve. It seemed so soft as to give the impression of being a cyst. The fifth nerve was stretched over the middle of the tumor, anteriorly. The entire cerebellum and brain stem seemed displaced, more especially the left lobe of the cerebellum which was displaced downward and backward. The lower left half of the pons and adjacent portion of the medulla were markedly compressed (Fig. 2).

The case also illustrates the difficulties in localizing even such a typical tumor as neoplasms of the acoustic nerve in the cerebello-pontine angle. Theoretically, this should be easy, but Bruns, Cushing and others have called attention to the absence of signs, and in this case up to within a few days of the operation there were practically no symptoms and signs which indicated with any degree of certainty that the growth was in the cerebello-pontine angle. I believe in our case the extreme softness, almost fluid consistency of the growth during life (although it became quite solid in formaldehyd solution), accounts for the absence of symptoms of pressure, the nerve trunks, being more firm than the tumor itself, were not compressed. Even the fifth nerve, which was stretched and flattened out over the tumor, showed no signs of loss of function, except twenty-four hours before death.

In this case we have typical history of a gradual diminution of hearing in left ear (side of lesion) beginning six years before the tumor caused general symptoms. Horizontal oscillations (jerking) of the eyeballs when turned toward side of lesion. No areflexia cornea at any period before the operation except a few days before death, although the autopsy showed that the fifth nerve was flattened into a ribbon over the tumor. There was no change in sensation, muscular power and reflexes in either upper or lower extremities. There was no choked disk until two months before the operation. In a word for six years after beginning deafness was noticed, no signs or symptoms of tumor of the cerebello-pontine angle were present. A few months before the operation, however, all general and focal signs rapidly set in. Then we have attacks, not continuous, of staggering gait, two attacks of astasia-abasia, inability to walk on account of static ataxia. Patient falls to the left; has no objective loss of power in arms or legs; perhaps a slight weakness of right leg; no ataxia of either arm, nystagmic jerking; weakness of internal rectus of right eye and external rectus of the left. Gait is not typically cerebellar; later on, weakness of right leg develops; bilateral ankle clonus, no ataxia in either upper or lower extremities when in recumbent position; no disturbance of sensation.

BASILAR MENINGITIS SIMULATING TUMOR

In this connection it is appropriate to note another case* which I believe to be a case of basilar syphilitic meningitis, although there is no autopsy report to confirm the diagnosis. Both Weisenberg and Mills have placed similar cases on record. Oppenheim in a recent case report warns us not to place too much importance on a positive Wassermann reaction or on temporary success of the antisyphilitic treatment, in a similar case.

This case was one of a typical syndrome of tumor of the cerebello-pontine angle: General symptoms of brain tumor plus one-sided involvement of the fifth, sixth, seventh and eighth nerves, with ataxia of one extremity on the same side.

The facts, however, that the patient had had a paraplegia six years before which disappeared completely under potassium iodid, and that she died suddenly with all the signs of an acute bulbar palsy, led me to believe that the case was one of basilar syphilitic meningitis. I did not recommend an operation, but placed her on gray oil injections, too late, however, to accomplish any results. This case only strengthens the rule that a careful history and a consideration of the symptoms in the chronologic order of their occurrence is necessary to make the differential diagnosis.

EARLY DIAGNOSIS

I cannot lay too much stress on the early diagnosis of tumors of the cerebello-pontine angle. They are very amenable to surgical treatment, as the numerous cases on record testify, but when the case has advanced to the point of compression of the pons, as in my case, little is to be hoped for from surgical interference. The aurist should be the first to recognize these cases, because of the early involvement of hearing, and should be on the lookout for the early symptoms, viz., progressive loss of hearing with middle ear normal, vestibular attacks of vertigo, slight weakness of face and areflexia cornea on the same side, with perhaps weakness of external rectus of same eye. No other focal lesion, with the possible exception of basilar syphilis, produces this syndrome.

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* The details of the history are given in the Transactions and in the author's reprints.

After the consideration of these cases we may say that tumors of the cerebello-pontine angle show a predominance of unilateral focal signs on part of the fifth, sixth, seventh and eighth, whereas tumors of the pons and medulla show bilateral focal signs with a clear indication of hemiplegia alternate. In both, the focal signs may precede the general signs of brain tumor, and frequently do. Pons and medulla tumors, being small, produce less marked general signs of brain tumor, whereas, the angle tumors have later on marked general signs. Choked disk is characterized by its absence in pons tumors, although this is not invariably the rule, whereas, the cerebello-pontine angle tumors manifest general signs. Choked disk is almost invariably present, together with headache, vomiting and vertigo, partly due to an associated internal hydrocephalus.

DIAGNOSIS OF CYSTS AND TUMORS OF CEREBELLUM

And now let us proceed to the consideration of that part of our subject which to my mind has the greatest practical importance, namely, the early diagnosis of cysts and tumors of the cerebellum itself. When these tumors and cysts have grown to such a size as to compress the cranial nerves and the pons itself, the diagnosis is not difficult, but the surgical prognosis is bad; whereas, the outlook is good if an early localizing diagnosis can be made before the tumor has grown beyond the confines of the cerebellum. This early diagnosis is very difficult. Not only is it difficult to say whether the growth is located on one side or the other, in the hemisphere, but it is often difficult to rule out the growths of the frontal lobe or to say with certainty whether the symptom complex is caused by a tumor, by acquired internal hydrocephalus, or whether we are dealing with the so-called pseudo-tumor symptom-complex.

CEREBELLAR CASES

Let me briefly introduce two cases here which will illustrate the difficulty of making an early exact localizing diagnosis in cerebellar cases:

Case 5.—*Patient.*—J. P. C., Nashville, Tenn., a man aged 47, single; occupation, sheet-writer. Parents both dead; cause unknown. The patient had never had syphilis or a chancre; had been a drinking man for past ten years, but had never been sick. Onset of present illness eight months previous to examination. The chief symptom was a constant headache, usually occipital, but at times frontal. These headaches were very severe in character, and the periods of freedom were few and short in duration. Any physical strain, and also coughing, made the headache worse. When the headaches were bad the patient was confined to bed, but when he attempted to walk he staggered and showed a tendency to fall to the right.

Examination.—May 30, 1909. The pupils were equal in size, and responded to light. The eyeballs were prominent; external muscles of eyes normal; papillæ normal; corneal reflexes normal; hearing normal in both ears. Left nasolabial fold not so prominent as the right; no defect of function in regions supplied by any other cranial nerve. Muscular power, sensation and reflexes of both upper and lower extremities were normal. There was some static ataxia; marked ataxic gait; patient staggering toward the right.

In the course of the following six weeks there were no new developments, except that the headache and vomiting became worse, to the extent that they were very severe and almost constant. The gait became so ataxic that patient was not able to walk or stand without support. No choked disk developed.

Diagnosis.—Cerebellar tumor, probably of the right side.

Operation.—A suboccipital decompression on the right side was decided on, and the operation was performed by Dr. Horace Whitacre. No tumor was found. The cerebello-pontine angle was explored. The intracranial pressure was very great. About one-third of the right lobe of the cerebellum was removed.

Result.—The immediate result of the operation was a complete relief from headache and vomiting. There was some ataxia of the right hand after the operation. After two weeks the patient was able to sit up, and gradually began to walk. His gait, however, was decidedly ataxic. During the four weeks at the hospital, following the operation, he suffered but one headache. Five months after the operation his condition is fair, but he does not walk much better and has occasional attacks of headache.

Case 6.—*Patient.*—M. M., a woman aged 36, was referred to me by Dr. F. Forchheimer on June 14, 1909. Patient was ill when an infant, but has since been in good health. Had influenza and whooping-cough four years ago. Had influenza nine weeks ago; since then constant headaches; partly frontal, partly occipital, the pain radiating into the shoulders. Had vomiting spells almost daily since the headache became constant. Had vertigo when the head was moved from side to side, or when asked to walk. Vision gradually failed, until patient was unable to read ordinary print.

Examination.—June 14, 1909. Facial expression one of great suffering; slight drooping of left eyelid; bilateral papilledema discovered by Dr. Walter Forchheimer one week ago; no loss of corneal reflexes; slight static ataxia when standing on right foot. The examination was otherwise negative.

During the next five weeks the condition gradually grew worse. Patient had repeated attacks of cerebellar spasms, during which there would be a momentary loss of consciousness, with general muscular rigidity. She also lost the patellar reflexes in both sides, and occasionally had double vision. There was no loss of muscular power in the legs, but the ataxia became so marked that patient refused to walk, but was able to walk with assistance. The vision rapidly grew worse, and a suboccipital decompression was resolved on, the left side being chosen as the probable seat of the tumor, on account of the drooping of the left eyelid and a tendency to stagger toward the left.

Operation.—The operation was performed by Dr. Horace Whitacre. A cyst, about the size of an English walnut, was found at the seat of the operation. It was subcortical, involving the posterior portion of the cerebellum, and on opening it a pale amber-colored fluid was discharged, followed by a collapse of the lobe of the cerebellum. Recovery from shock and anesthesia was rapid.

Results.—Headache and vomiting ceased for a while, and the vision improved greatly, but the other signs remained unchanged. The choked disk continued, the double vision likewise. The patellar reflexes did not return. A sinus established itself automatically, and cerebrospinal fluid escaped in large quantities. After two weeks the headache and somnolence returned. There was an occasional attack of vomiting. There developed an acute ataxia of the left arm and leg, which rendered the patient unable to walk at all. There was also a marked weakness of the left arm. Incontinence of urine and feces developed, and there was a return of the cerebellar seizures. At this time I went away on my summer vacation and left the case in charge of Drs. Whitacre and Langdon. An attempt was made to relieve the patient by draining the lateral ventricles, but the patient died within twenty-four hours after the operation.

TOPOGRAPHIC DIAGNOSIS OF CEREBELLAR TUMORS

The chief interest in the study of the differential topographic diagnosis of tumors below the tentorium cerebelli is whether we have arrived at that state of diagnostic acumen which will enable us to say with any degree of certainty whether a growth is located in the cerebellum itself, and above all, which lobe of the cerebellum is involved. I believe that we can say with some accuracy whether a growth is in the pons, or the region of the corpora quadrigemina, and I believe that the diagnosis of growths in the cerebro-pontine angle can be made with almost equal facility; but the great stumbling-block is offered by tumors of the cerebellum itself. We have seen what signs and symptoms are peculiar to neoplasms of the pons, of the region of the corpora quadrigemina and of the cerebello-pontine angle.

In arriving at a diagnosis of tumors of the cerebellar hemisphere our first step is one of exclusion; we must exclude tumors in the above locations. Then we must exclude frontal lobe tumors. We cannot here go into the symptomatology of frontal lobe tumors, but suffice it to say that there are well known physiologic facts and clinical and surgical experiences which attest the fact that at times it is practically impossible to say whether the tumor is in the frontal lobe or in the cerebellum.

The physiologic fact to which I refer is that the loss or disturbance of function of one cerebellar hemisphere when removed in animal experiments, especially the ataxia, quickly disappears after the operation, but if the animal is then deprived of the opposite frontal lobe, all the cerebellar symptoms return. In a word, the frontal lobe in a measure takes up, or at least compensates for the loss of the function of the crossed cerebellar hemisphere. This interaction of function takes place through the fronto-bridge-cerebellar tract. It is also a well-known fact, that tumors of the frontal lobe, both by causing ataxia, and by producing distance pressure signs, can cause a symptom-complex, which at times can hardly be distinguished from a cerebellar symptom-complex. Moreover, it is not unusual to have unilateral spasms and even Jacksonian seizures in cerebellar lesions, as the cases of Mills and Weisenberg and Case 4 of this paper show, which complicates the matter still more.

FRONTAL TUMORS

Following is a short history of a case of left frontal tumor:

Case 7.—*Patient.*—G. von L., aged 41, was admitted to Cincinnati Hospital Aug. 5, 1901, in a maniacal state, complaining of pain in the left occipital region. He denied venereal diseases and alcoholism. The patient was unable to give a history of his case. According to the wife's statement, he had failed in business six months previously, much worried. For the past six months she noticed a mental deterioration, he did not seem bright, was forgetful. For previous two months he had complained much of pain in the left occipital region. Six weeks before admission, while beating a carpet, patient suddenly staggered backward, was supported to a chair, stared at his wife, was unable to speak, became blue in the face, but did not lose consciousness. At the same time he had a spasm in the right leg, but none in the right arm. The patient said that he felt as if he were going up to the ceiling. He had about ten such attacks that night, three or four the next day and then they became less frequent and finally stopped. This was followed by formication and numbness of right foot. Later he had an attack of paralysis of the right side, which soon passed away and patient returned to his business. There was no headache or vertigo during this period. At times the patient would stagger and show a tendency to fall to the right side, and could not walk without support for the past few days. After a severe attack of pain in the left occipital region a few days before admission, patient had numbness and weakness of the right leg. He began to vomit and had attacks of vertigo. At night he became delirious and in a few days became maniacal and was brought to the hospital.

Examination.—Mental condition was bad, could be aroused from stupor, but was unable to give an account of himself, did not seem to understand the questions put to him, did not speak voluntarily, when asked a question, repeated it slowly, but gave no answer. Paresis of left facial was present, paresis of left side of tongue doubtful, patient was unable to state whether right hand was weak or not on account of mental condition; right leg was dragged when patient attempted to walk. Patient fell to right side. There was no ankle clonus, no Babinski in right side. On ophthalmoscopic examination double choked disk was observed, with hemorrhagic retinitis, right pupil larger than the left, left pupil did not respond to light, right one responded. Slight ptosis of right eyelid, paresis of external rectus of both eyes.

Operation.—An unsuccessful operation was done over left cerebellar hemisphere. Patient died within thirty-six hours.

Autopsy.—Autopsy revealed a tumor the size of a hen's egg, which grew from the dura on the lower surface of the frontal lobe up into the frontal lobe. It was not infiltrating, and the frontal lobe surrounded the tumor like a shell.

This patient was operated on for a cerebellar growth chiefly owing to the fact that there was a hemiplegia alternans, involvement of the external recti of both sides and history of a staggering gait with tendency to fall to one side.

Only recently an autopsy was made in a similar case in which one feature of the clinical history was that the patient at times had a staggering gait. Dercum recently reported a similar case, in which the operation was made over the cerebellum and the autopsy revealed frontal tumor. We are gradually, however, improving our knowledge of frontal growths, as well as of those of the cerebellum. I believe that we shall make fewer mistakes along these lines if we pay greater attention to the chronologic order of the development of signs and symptoms, and I believe that in frontal growths some change in the mental state will occur, and will often even antedate the general symptoms of brain tumor, whereas, *mental symptoms if they occur at all, occur* late in cerebellar tumors. In at least two cases of frontal tumors in my observation the mental deterioration was manifest, the above history showing that the patient at times even became maniacal, and was brought into the hospital in this condition. In the other case, which I refer to above, aside from a progressive loss of vision and the ataxia there were no mental symptoms, except a remarkable euphoria, a cheerfulness which continued to death, lasting over four years, which is certainly unusual in brain tumor cases of other location.

Only recently Reich has shown that we may even have areflexia cornea, which is looked on as a positive diagnostic sign of tumors of the cerebello-pontine angle, in frontal tumors. This, however, is so rare that it need not complicate the diagnosis.

PSEUDOTUMORS OF THE BRAIN

In making the diagnosis of cerebellar growths, we must also rule out pseudotumors of the brain, a subject which has been placed on record by Nonne, Oppenheim, myself and others. This pseudotumor symptom-complex is more apt to resemble the cerebellar symptom-complex than any other. Its pathology is unknown. The autopsy in one of my cases was entirely negative, so far as the brain was concerned. Here is a summary of the typical syndrome: headache, violent vertigo, vomiting, bilateral choked disk, paresis of the external recti muscles of the eyes, areflexia cornea, especially of the right eye, tinnitus, with diminished hearing on the same side, cerebellar ataxia and deflection of head and even entire body to one side. These signs of pseudotumor are in a manner similar to acquired internal hydrocephalus or serous meningitis. These two conditions must be ruled out, and the only means at our command are the presence of other signs and symptoms, on which I shall presently lay stress, which are present in cerebellar cases, and absent in the above symptom-complexes.

PHYSIOLOGY OF THE CEREBELLUM

A few words on the physiology of the cerebellum will be in place here. The chief function of the cerebellum as ascertained by animal experimentation, is that of automatic coordination. Through the medium of the cerebellar tract, Gowers' tract, the posterior column cerebellar tract, and the vestibular nerve, all of which Bruce holds end in the cortex of the vermiform lobe, the cerebellum obtains knowledge of the state of contraction, and the tone of all muscles of the body and the position of the body. When these tracts are interfered with within the cerebellum we have the chief symptom of cerebellar disease, viz., cerebellar ataxia. Lesions of the cerebellum, however, are not the only factor in the production of cerebellar ataxia. We know that tracts lead from the cerebellum to the pons through the corpora quadrigemina and to the opposite cerebral hemisphere, and that the destruction of any one of these tracts will cause cerebellar ataxia. Hence, lesions of the frontal lobe, of the corpora quadrigemina and of the pons may cause cerebellar ataxia. In the lesions of the cerebellum, however, we have ataxia without any associated signs, such as will form part of the syndrome in lesions of the frontal lobe of the corpora quadrigemina and of the pons. In considering cerebellar ataxia and other signs of cerebellar lesions we must not forget, that the loss of function of one cerebellar hemisphere, as Munk and others have shown, may be compensated by the opposite frontal lobe, and that symptoms may disappear; or that disease of one hemisphere may even run a latent course. Babinski lays much stress on a physiologic phenomenon which Munk attributes to the cerebellum, viz., a harmonious interaction between the movements of the extremities and those of the trunk. Babinski calls this function *synergie* and the loss of it *asynergie cerebelleuse.* By this is meant a loss of harmony, which shows itself when walking, for instance, by an attempt to bring the leg forward, while the trunk does not change its position or may even go backward. This symptom was typically illustrated by the tendency to retropulsion on attempting to walk in Case 1, or by the inability in Case 2, of the patient to walk forward when the eyes were closed. *Asynergie cerebelleuse* may be confined to one side—hemiasynergy—as in Case 6; and Babinski says that it points to a lesion of the cerebellar hemisphere on that side or to one of the tracts leading to the hemisphere, or from the hemisphere on that side. Oppenheim seems to agree to this; Spiller dissents. Forced movements are seen in animals, rolling movements, but Munk does not attribute them to lesions of the cerebellum, but to other causes. In the human being we see a tendency to assume certain positions in bed, or to hold the head to one side, the diagnostic value of which we will consider later.

Astasia-abasia, hemiataxic movements, homolateral weakness of muscles, homolateral convulsions, will be considered as localizing signs later on, as will also speech disturbances and nystagmus, all of which have been attributed to loss of function of the cerebellum.

FOCAL SIGNS

What are the focal signs which clinical experience has taught us as pointing to tumors of the cerebellum? The following syndrome calls for analysis:

1. Cerebellar ataxia.
2. Atactic movements, hemiataxia, *asynergic cerebelleuse,* hemiasynergy and tremor.
3. Vertigo.
4. Nystagmic jerking and other eye-muscle signs.
5. Atonic paresis of trunk and extremity muscles on one side.
6. Adiadokokinesia and speech disturbances.
7. Convulsions, unilateral or bilateral.
8. Attitude of the head.

Let us take up the signs and symptoms in the order as they are given:

Cerebellar Ataxia.—The typical, reeling staggering gait is probably seen only in tumors of the vermiform lobe. Perhaps also in quadrigemina tumors (Case 1), but here it will be associated with extensive eye-palsies, which will be absent in the cerebellar lesion.

What is more commonly seen is staggering to one side and a tendency to fall to one side. I believe that when unassociated with pontine signs or symptoms, this may be looked on as fairly characteristic of lesions of the cerebellar hemisphere. It would be of great value, if it could be established as a law, that the patient reels or falls to the side of the lesion. Weisenburg seems to think that this is the case. Two of my patients showed a tendency to fall toward the side of the lesion; one did not. Oppenheim and Siemerling and Spiller hold that we cannot rely on this sign as pointing to the side of the lesion. Siemerling says that cerebellar ataxia may be entirely absent. If the vermis is the seat of the growth, the ataxia may be so great that the patient is unable to stand at all. This is true likewise of growths of the corpora quadrigemina, as Case 1 shows; but in advanced cases, as Nos. 3, 5 and 6 show, may be present in pressure in or on the lateral lobes, or in tumors of the brain stem. But this may be explained by distal or contiguous pressure on the vermiform lobe or cerebellar tracts, in all three of these cases.

Hemiataxia and Hemiasynergy.—These, which Oppenheim thinks may be identical manifestations of cerebellar incoordination, are often present, and may, after further investigation, be found to be of great topographic diagnostic importance as pointing to lesions in the same side of the cerebellum.

Bruns says that hemiataxia is a valuable sign, because it occurs early, and is a sign of an intracerebellar lesion. In the four cases reported by him it occurred in the homolateral arm in each case.

Soques reports hemiasynergy and adiadokokinesia on the same side, homolateral, in a case of tumor of the cerebello-pontine angle.

In Case 3, presumably a pons tumor, very marked hemiataxia, perhaps hemiasynergy, and certainly adiadokokinesia, developed four or five months after the onset of the first symptoms.

The homolateral ataxia which was seen in Case 5 after the operation, is in effect a physiologic observation. No tumor having been found, a large portion of the cerebellar hemisphere was removed, and the homolateral ataxia was noticed after a few days.

In Case 6 there was static ataxia of the right leg (side of cyst), before the operation, loss of patellar reflexes and atony of both legs, but no loss of muscular power. The ataxia became so marked that patient refused to attempt to walk. After the operation the ataxia of the left arm and leg became very acute. In a word, the cyst was found on the left side, and the ataxia was most marked on the left side, the right arm and leg being free. When ataxia is suspected but not present in the ordinary way of standing or walking, Oppenheim recommends that the patient be placed in the ordinary Romberg position, and be asked to bend forward with closed eyes. As a rule, not only will the loss of equilibrium show itself, but also the side toward which the patient sways, will show itself. Some stress has been laid on unilateral tremor of multiple sclerosis, as a sign of cerebellar disease. Collins, Bruns, Siemerling and Oppenheim have called attention to this sign, and when present, it is usually homolateral.

Atonic Paresis.—Atony of the trunk muscles on side of the lesion, homolateral weakness in the atactic limb and loss of patellar reflexes on one side or both, may occur, as seen in Case 6. Bruns says that it occurs only in acute cases after removal of a part of the cerebellum. Siemerling says that it is still a debatable sign. A sudden and acute onset of astasia-abasia, disappearing just as suddenly, was seen in Case 3.

Vertigo.—This, which is invariably present in subtentorial growths, is not of much localizing value. The exact differentiation between vertigo of intra- and extracerebellar origin, as defined by Stewart and Holmes, has not been verified by others and needs further investigation, namely, that in intracerebellar tumors the objects and the apparent movements of their own bodies are from the side of the lesion to the opposite side, and in extracerebellar tumors the apparent movement is toward the side of the lesion. If, however, vertigo is brought about by changing the position of the body or of the head, we may safely say that this occurs when the body or the head is turned away from the side of the lesion.

Nystagmus.—Not the typical nystagmus seen in multiple sclerosis, but a nystagmic jerking, when the eyes are turned to one side or the other, is frequently seen in subtentorial growths. Munk says that strabismus and nystagmus are not seen in animals as a result of the removal of one-half of the cerebellum, but as a result of injuries to the neighboring parts. Siemerling, although admitting it as a sign of intracerebellar lesion, thinks that it is caused by pressure on the pons or corpora quadrigemina. H. Neuman and Collins look on it as a cerebellar sign. Nystagmic jerking is usually seen when the eyes are turned toward the side of the lesion, but this is not the invariable rule. It was present toward the side of lesion in Case 3. It was not present in Case 5 either before or after the operation; nor was it present in Case 6.

Spiller, in a case of cerebellar abscess, says that the nystagmus became more marked when the patient looked toward the seat of the lesion. H. Neuman has conformed this in a later communication.

Siemerling does not feel that the direction of the nystagmus has a positive localizing value, while Oppenheim thinks that nystagmus may be a sign of intracerebellar disease, although it more frequently is the result of distal pressure. I have never seen general ataxia of the eyeballs such as Spiller and Weisenburg describe in a subtentorial tumor, but have seen it in a case of nuclear degeneration of the centers in a case of chronic bulbar palsy.

Attitude.—In this respect, I wish to call attention to the fact that the position of the head and the position of the body have a marked influence on bringing out signs of cerebellar tumors that may be latent. In Case 3 nystagmus occurred only when the eyes were turned toward the seat of the lesion. Oppenheim in a recent article gives his experiences on this subject. He cites two cases of tumor of the cerebellum in which a nystagmus was only slightly indicated when the patients, in a standing position, looked to one side or the other, but which become very marked even when the eyes were at rest, if the patients reclined on one side. In another case in which nystagmus was absent when standing or lying on the back, if the patient lay on his right side and looked toward the left, nystagmus appeared at once, and a paresis of the external rectus became apparent. In another case, nystagmus on looking toward the side of the lesion appeared only after the patient had been turned on a revolving chair, two or three times. In two other cases of subtentorial tumors, areflexia cornea was produced by having the patient lie on the side opposite to the tumor.

Convulsions.—General convulsions or unilateral convulsions, of the cerebellar type, viz., opisthotonos, momentary loss of consciousness with a general clonic spasm of very short duration, are indicative of subtentorial pressure and irritation of the pons, rather than of intracerebellar tumor. They were seen in Case 6 (cyst of hemisphere), as well as in Case 3 (tumor of cerebello-pontine angle). Probably one of the most valuable signs which will indicate the side of the lesion is one to which Babinski has called attention, namely:

Adiadokokinesia.—By this is meant a slowing of movements of an alternating character, and is best illustrated by successive pronation and supination of hand and forearm. In lesions of the cerebellar hemispheres there is a marked diminution in the rapidity with which these movements can be alternated, and occurs always on the homolateral side. Oppenheim and Collins and Siemerling lay much stress on this sign, and especially Siemerling, who says that he always *found it after his attention was called to it.*

Adiadokokinesia, according to Boenhoeffer, who describes speech disturbance in a case of cerebellar tumor, manifests itself as bradyphasia; he says that it is due to an inability of the patient to rearrange his lip and tongue muscles rapidly, which is necessary for fluent speech. Other speech disturbances have been ascribed to cerebellar lesions, as a staccato, jerky mode of talking, which has been attributed to incoordination or ataxia of the muscles of tongue, lip and larynx. Speech becomes slow, repetition of long words causes a chopped-off reproduction, and at times stumbling and stammering. Rapid speech is impossible, but there is no anarthria. The attitude of the head may give us some indication as to the side of the lesion. Baten called attention to the fact that the head is inclined in such a way that the occiput points to the side of the tumor, and the chin is pointed away from that side. Collins, in a case of hemorrhage, describes just the opposite condition. Oppenheim says that there is no rule, but that the patient assumes such a position of the head and body as cause him least inconvenience. Spiller also thinks that there is no rule. In my cases I could not confirm the rule. Sholz has used the Neisser puncture test to determine the side of lesion, and located the tumor in two out of three cases by this means. Oppenheim calls attention to a difference in the percussion note on the two sides, and says that we may find more dulness on the side of the lesion. Bruns calls attention, especially in children, to tenderness on percussion, and the cracked-pot sign, on the side of the lesion.

19 West Seventh Street.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HOPPE, LANGDON AND KRAMER, AND GRINKER

Dr. C. H. Hughes, St. Louis: Papers of this character are always exceedingly interesting from the light they give us on the subject of diagnosis. Symptomatically in all we have choked disk *and titubating, unstable gait. No paper has yet* been given presenting a case so markedly unilateral as to give us that characteristic symptom in the gait, of a disposition to describe a semicircle in the walking of the patient.

The subject of brain tumors becomes especially interesting for the purpose of diagnosis, particularly focal diagnosis, as they impinge on the origin or a course of certain cranial nerves. Tumors of the *posterior portion of* the brain and cerebellum often result in loss of vision which is quite characteristic, but the tumor in the white matter of the brain causes choked disk only from the general involvement of the brain, and its congestive condition apparently, so far as my observation has gone.

When as a surgeon, I was called to preside over a hospital for the insane, I used to think that it was the province of a surgeon to operate in every case when opportunity offered, especially for epilepsy and tumors. But I am not so hasty now in operative suggestion. I recall an instance of unilateral involvement *of the cerebellum accompanied by the* characteristic tendency to describe a circle on the opposite side of the lesion in attempting to walk, I was agreeably surprised in that case, after the use of extensive doses of cathartics and sodium bromid, etc., to see that symptom disappear. Notwithstanding, the man died and I made the autopsy which McLean Hamilton reproduced in his classical work on that subject at the time. *We have not all the light that is coming to us yet* on the subject of tumors, but we are getting more light than we had some years ago.

Dr. G. W. Hall, Chicago: In one case that Dr. Grinker reports, the patient, who came on my service at the Cook County Hospital, showed the typical findings of the process in the right cerebello pontile angle, and the question at that time so far as the diagnosis was concerned was whether or not there was an abscess or tumor. As Dr. Grinker brought out in the history of the case, it was at first very puzzling, because the patient had also a discharging ear, but the fact that the ear *had been punctured by a physician, on the outside, at a* more recent date than the onset of the symptoms, easily cleared up the history, sufficiently to guarantee the advisability of an operation.

In connection with that case I might mention also the conditions which Dr. Hoppe brought out as to frontal tumors. No one can make an absolutely accurate diagnosis as to localization of tumors of the brain perhaps outside of the cerebello pontile angle. We have seen instances occur in which diagnosis of cerebellar processes have been made, and the processes were found in the frontal lobe or in the brain proper.

Dr. Hoppe's statement as to the mental symptoms occurring in the frontal tumors rather than in the cerebellar tumors seems to be a point well taken. That was especially dwelt on by Dr. Beevor in one case he had on his service in the hospital at Queen's Square, London, in which he made the probable diagnosis of a frontal tumor rather than a tumor of the cerebellar process because of certain mental symptoms present in that case.

Dr. Charles L. Dana, New York: A few years ago the subject of brain tumors had become interesting, because the success of surgical intervention was so poor, but in the last four years we have been much more successful in localizing *and removing tumors, especially subtentorial tumors.* In historical justice to American neurologists, Dr. Grinker ought to state that the attention to the clinical facts regarding tumors of the cerebello pontile angle, was first brought out by Dr. Hunt and Dr. Franckel about four years ago in a series of papers and reports which they made at that time, it antedated any emphatic recognition of these tumors by any foreign or American neurologist or surgeon that I know of. At that time they reported several cases and three operations, all unsuccessful, but they then drew attention to the fact of the ease with which such tumors can as a rule, be recognized. One point which they made was that in some of these patients there was a neurofibromatosis of the skin, so that in some cases the possibility of a tumor of the cerebello pontile angle was suggested by the fact that a great many little fibromas of the skin had been noticed in the patient.

There is a symptom in cerebellar disease sometimes seen in tumors, hemorrhages and softening and atrophic conditions, that is, a certain *tendency to catatonia.*

The cerebellar seizures that have been referred to vary somewhat in character, but are most frequently, I think, either sudden plunges forward or sudden droppings down by the patient as though he had been struck by lightning, or suddenly fainted, at other times the patients fall down and assume the sprawling attitude and tonic spasms such as are seen in animals *experimentally operated on.* These cerebellar seizures generally come from lesions that begin from an extramedullary source—tumors of the pontile angle or of meningeal origin.

Dr. Theodore Diller, Pittsburg: Those who attended the Section last year at Atlantic City will remember a patient that I showed before the Section at that time, from whom a cerebellar tumor had been removed. This patient suffered from very severe headaches, showed a high grade of optic neuritis, 6 or 7 D., and had a posture of the head to the left, away from the tumor. The tumor was removed from the anterior margin of the cerebellum after about one third of the cerebellar lobe had been removed. I saw this patient about a month ago; he is working on a farm. His gait, which was extremely uncertain, is good. He is entirely free from pain. He says that he sees well, and is comfortable in every way, and the only thing that we can discover wrong with him is a moderate grade of optic atrophy. This case is now of about eighteen months' standing.

I commend very much Dr. Hoppe's method of presenting his case here today by the pictures. It is difficult to transport specimens to a meeting, but stereopticon views like these give as plain a perspective view of the tumor as the actual specimen would.

With regard to this point of the confusion between frontal and cerebellar lesions, let me say that recently I saw a patient whose history was that he had fallen, and that an operation had been done in the frontal region, and a small amount of pus removed a year ago. When I saw this patient he was having a *great deal of pain in the occipital region, he was complaining* of very severe pain confined to the frontal region and his head was extended backward very far. He had no fever; and he had not the slightest pain in the frontal region. We hurried him off to the hospital. An operation was done over the frontal region and an abscess was found immediately below the site of the old wound, and I think fully an ounce of pus came out. The case is very striking. The only thing the man complained of was very severe pain in the occipital region (not localized as to the side—probably bilateral), and this was due to an abscess in the frontal lobe.

Dr. D'Orsay Hecht, Chicago: The interest taken in cerebellar neoplasms and the discussions arising therefrom, have resulted in a gratifying percentage of accurate localizations in operations in this region. This is particularly true of cases with acusticus symptoms. As soon as a suspected tumor presents in a marked degree eighth nerve involvement, the tendency is to designate it as a cerebello pontile angle tumor. I should like to get some expression from the members with *regard to* the propriety of calling tumors, necessarily wide spread in their extent over the cerebellum or in the cerebello pontile space, angle tumors. We are in truth not dealing with an angle, so far as the invasion by tumor of this area is concerned. We are rather dealing with a quadrilateral space, something that has more of the configuration of a rectangle. I feel, therefore, that if we get away from the designation of angles in these cases we may be serving cranial topography with more accuracy, so far as this site of predilection for certain tumors is concerned.

In Dr. Grinker's paper, I think that, aside from the complete report of his cases, chief interest centers in the character of his summary, in which he dwells upon the question of glioma and sarcoma, as well as the expediency of lumbar puncture. I think that we as neurologists are quite agreed that lumbar puncture of itself is a relatively innocuous adjunct to our diagnostic technic, but it may prove a decidedly dangerous measure in the presence of a brain tumor. Perhaps this particular fact is not sufficiently impressed on internists or general practitioners. I have not infrequently heard physicians who busy themselves more or less with the modern routine in neurologic examination, ask whether a lumbar puncture has been made, forgetting, I think, that lumbar puncture may be of real danger to the patient when we are dealing with obvious symptoms of intracranial pressure of tumor origin. I should advise extreme conservatism in doing lumbar puncture in this type of case.

I think, too, that in those cases in which cerebral tumor of solid formation is suspected, we are not infrequently surprised to find a cyst, capable of evacuation, and therefore yielding a better prognosis than was admissible from the premises prior to operation. I recall such an experience five or six months ago, when it was my privilege to see a case of brain tumor at the request of Dr. Alfred Murray. I made a localization of cerebellar tumor and the patient was operated on by Dr. Albert E. Halstead, of Chicago. The acusticus findings were of very material value in referring the tumor to the cerebello-pontile space (or angle, if you wish) and on a very extensive decompression, exposing both sides of the cerebellum very widely and spaciously, it was found that the suspected area was filled with a fairly large cyst, which was properly evacuated, and at a recent date, the patient was doing very well in his own home, and able to be up and about, for a time even following his occupation as a pharmacist.

I agree with Dr. Dana that we should not forsake the old and well-tried clinical criteria in arriving at a localization, but, on the other hand, I feel that we should put due emphasis on some of the newer additions to our technic and credit with importance such a symptom as, for instance, has been advanced by the French school, and called "adiadokokinesia." I have noted it in several instances, and I think, as an evidence of asynergy, it is quite as important as are other symptoms entering into the question of the coordinating function, as it depends upon the cerebellum.

Dr. Julius Grinker, Chicago: I wish to emphasize a point of general practical interest, namely, that hysteria and neurasthenia are diagnosed often in cases requiring more extended investigation. I recall several such cases of my own, in which the symptoms at first pointed to functional disease, but brain symptoms developed later and the diagnosis of organic disease had to be made.

One point which has not received due emphasis in this discussion is that cerebello-pontile angle tumor may begin with hemiplegic symptoms. My third case, which for lack of time could not be reported in full, was diagnosed as hemiplegia at a time when there were hemiplegic manifestations in the form of one-sided asthenia, that is, a unilateral weakness resulting from cerebellar atonia. In these cases there is neither exaggeration of reflexes, nor Babinski sign.

I am very thankful to Dr. Dana for correcting my short reference to the historical development of this subject. It is quite true that Drs. Hunt and Franckel were the first to call attention to tumors in the cerebello-pontile angle; they also furnished splendid contributions to the symptomatology.

In my opinion the new cerebellar sign described by Babinski under the term "adiadokokinesia" is not valueless. When present, *it is a reliable sign. It is more often absent than* present and frequently it only appears after an operation has been performed on the cerebellum, certainly too late to be of value in diagnosis. In one of my cases this symptom was present before any of the others. While, then, this sign may not be of the greatest value, we may nevertheless consider it, if only the observation may serve to determine its proper place in the symptomatology of cerebellar tumor.

Staggering to one side is not a reliable focal sign. In two of my cases the staggering was on the side of the tumor; in the third case the patient staggered to either side.

Concerning speech disturbance, my first case showed an utterance which might be called "jerky" speech, rather than bradyphasia. The so-called "cracked-pot" resonance I have not found in my cases, but I have often observed it in the hydrocephalus of children.

EHRLICH'S BIOCHEMICAL THEORY, ITS CONCEPTION AND APPLICATION *

LOUIS HART MARKS, M.D.
Fellow of the Royal Institute for Experimental Therapeutics
FRANKFORT A. M., GERMANY

It is my privilege in this paper to take up the subject of specific chemical therapeutics, which is equivalent to saying that I am to expound the work that Professor Paul Ehrlich has accomplished in the past seven years, during which time he has done far more than merely lay the *foundation of this new science*. It can be said that this basic idea, which he has followed logically from the very beginning of his experimental work, down through his present world-stirring discovery; namely, that a specific chemical affinity exists between specific living cells and specific chemical substances, is his main, most valuable, broadest and most suggestive contribution to science.

It was this idea that was at the foundation of his famous studies on the morphology of the cellular constitution of the blood. As is known, Ehrlich was the first to describe correctly the leukocytes, and to teach us to differentiate not only different parts of the body of the leukocyte from one another, but also the different kinds of leukocytes one from the other, by showing that these different parts stain differently with the same dyestuffs.

Following up this work in the field of morphology he studied vital staining and demonstrated even more clearly the selective action of many different substances for different tissues of the body. The best-known experiment in this connection is the one performed with methylene blue, whereby he showed that if the substance be injected directly into the circulation, on section of the animal some time later, the tissues of the nervous system will be the only ones colored blue. He found further that those cells of the body which demand the most oxygen would not be colored at all, but would turn blue after an exposure to the air. This led to the publication of a work[1] which stands out as a beacon light in the realm of science, and is surpassed only by his original publication of his fundamental theory concerning the distribution and selective action of chemicals in the human body.

Further following out his idea he happened to feed mice with ricin and abrin, the vegetable poisons contained in the castor oil and jequirity beans, and found that he could immunize them against these poisons. Not only was this the first time that animals were highly immunized to vegetable poisons, but it was also the first time that the degree of immunity was definitely known. He also discovered the coagulative action of ricin on the red blood-corpuscles and found that he could prevent this by adding to a mixture of ricin and red blood-corpuscles a small quantity of the blood-serum of a previously immunized animal.

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* Delivered by invitation before the Anglo-American Medical Association of Berlin, Sept. 10, 1910.

[1] The Oxygen Requirements of the Organism.

As the opportunity was given to Ehrlich to follow out on a large scale researches that he had long hoped to be enabled to carry on, and to which he was much more forcibly attracted, he left the other fields of research to undertake the study of specific chemical therapeutics.

Ehrlich believed (and this belief found sufficient support in his twenty-five years of experience) that for each specific parasite a specific curative drug must and could be found.

An important question to be solved in starting this work was the selection of a suitable parasite and a suitable animal for experimentation.

Because of the sleeping-sickness epidemic in Africa, and because the trypanosome is easily transferable to mice, Ehrlich began working with trypanosomes. At first he used many dyestuffs, some entirely new, some old. He soon succeeded, in connection with Weinberg, in producing a new dyestuff, trypan-red, which absolutely cured every infected mouse with one injection. This was the first time that a living organism was completely sterilized; that is, that every one of the parasites within the body was completely destroyed by a disinfectant.

The complete sterilization of the animal's body with trypan-red was but the first step forward in this new science. It was found that if a slightly smaller dose was injected than was necessary completely to destroy all the trypanosomes, then these would entirely disappear from the circulation for a period directly proportional to the dose given, but after that period they would again return. If the mouse were again injected with the same dose, the parasites would again disappear only to return after a shorter interval. If the injection was repeated several times, a strain of trypanosomes would be obtained on which trypan-red had not the slightest effect. In other words, the parasites became completely resistant to the largest dose of trypan-red that it was possible to inject into a mouse without causing injury to it, and this resistance was transmitted to the trypanosomes for many generations. It is possible that if a strain of trypanosomes could be brought to the maximum immunity towards a given drug, this characteristic would become constant. For example, we have in our laboratory a strain of trypanosomes which nearly four years ago was made resistant to atoxyl, and is still resistant after three and one-half years passage through normal mice.

And again, I have succeeded after three and one-half years of arduous work in producing a strain of paratyphoid bacilli resistant to arsenious acid. I have grown them on agar containing increasing quantities of the drug. At first a dilution of 1 to 28,000 was sufficient to prevent the growth of the bacilli, but now they grow freely on an agar containing a dilution of 1 to 3,500. The chemical receptors of the bacteria as well as the agglutinative receptors are entirely different from those of the original strain; for instance, the resistant strain is completely resistant to antimony, which the original strain is not. At first when the dilutions were very great it was easy to bring the strain back to normal by passing it several times on ordinary agar. However, we have passed a highly resistant strain on ordinary agar 150 times, without succeeding in bringing it back to normal.

The demonstration that these parasites could so readily become resistant to different chemical substances led to the logical conclusion that in order permanently to cure a parasitic disease it is necessary to destroy in the shortest time every single parasite with one injection of a drug, as it can readily be seen that if complete sterilization is not achieved, and frequently repeated doses are necessary, the substance would soon lose all effect, and the person or animal treated would then be worse off than before the treatment was begun.

This, then, became Ehrlich's aim: to produce a substance which was so specific for given parasites that they would be completely destroyed by one injection.

Just as a general to make sure of victory when trying to capture a fort on a hill attacks it from all sides, so Ehrlich went to work. As the parasites have many receptors specific for different groups of substances, many different substances are tried out; in other words, a combination treatment is aimed at. Therefore Ehrlich has striven in the last few years to produce more than one drug which would act as specific on the same parasite. This combination treatment also has the additional advantage that much smaller and less dangerous doses can be given than would be necessary if the maximum tolerable dose of one drug were used.

As has always been the case in the treatment of diseases, all possible drugs were tried on animals and people infected with trypanosomes. Bruce was the first to find that arsenic was a drug of appreciable value in the treatment of surra (trypanosomiasis of horses). Soon after Ehrlich started his work on trypanosomes, Thomas found that atoxyl, a compound of arsenic and anilin, would cure a large percentage of infected laboratory animals. Then Kopke used atoxyl in the treatment of human sleeping-sickness in Africa. Ehrlich started to work with atoxyl and found that it was an entirely different substance from what Béchamp, its discoverer, had thought it to be: instead of the arsenic being connected directly with the nitrogen of the anilin, and instead of this combination of anilin and arsenic being a very loose one, the arsenic was directly connected with the benzol ring of the anilin and the combination was a stable one and capable of entering into many different kinds of substitution products.

Almost at the beginning of the work it was discovered that although trypan-red possessed the power of destroying all the trypanosomes in the body of a heavily infected mouse, it had no effect whatever when mixed in a test-tube with a blood-suspension containing trypanosomes even in the strongest dilution. It was also found by Mesnil that atoxyl, which caused the trypanosomes to disappear within several hours from the circulation and glands of patients suffering from sleeping-sickness, possessed absolutely no effect on trypanosomes outside of the body in a test-tube. These two phenomena Ehrlich designated as a paradoxical or indirect action.

In order to explain this phenomenon it is necessary to glance over the general theories underlying this science as they have frequently been expounded by Ehrlich. First, what are the drugs that come under consideration at all? and then, how are these drugs effective?

Of these drugs there are three groups:

1. The arsenic group, examples of which are arsenious acid, atoxyl, and later the new atoxyl substitution products, such as acetylatoxyl, arsenophenylglycin and dioxydiamidoarsenobenzol. To this group can also be added the antimony compounds.

2. Certain azo-dyestuffs, such as trypan-red, discovered by Ehrlich and Weinberg, and trypan-blue and trypan-violet, discovered by Mesnil.

3. Certain basic triphenylmethan dyestuffs, such as parafuchsin, methyl-violet and pyronin.

The mode of action of these different drugs varies, according to Ehrlich, as follows:

1. Some substances have *no effect on the parasite* in test-tubes and possess no curative properties; in other words, the trypanosomes possess no receptor which fits into the atom grouping of the substances.

2. The substance has a highly destructive action on the parasites outside the body; but has absolutely no curative effect. This is best illustrated by the experiment of Koch with anthrax bacilli and bichlorid of mercury.

3. The substance has absolutely no effect on the parasites outside the body, but shows a highly or completely curative action when within the body. This is the indirect *action which I have just spoken of, and under this* category can be placed most of those drugs which are of practical interest.

Ehrlich has now brought forth sufficient proofs that this paradoxical or indirect action, which many other dyestuffs and arsenic compounds also possess, is due to one of the following conditions:

The first condition is that the substance, which outside the body has no effect on the parasites, is so changed in the body that it becomes effective. In the case of atoxyl Ehrlich has proved that the effect is due to a reduction of the substance within the body, and that the reduced substance is probably a compound called paramidophenylarsenoxyd. This substance he manufactured in the laboratory by reducing atoxyl, which then destroyed the trypanosomes in a test-tube in the amazing dilution of three or four millions. He theorizes from the results which he has obtained with many hundred arsenic compounds that the trypanosomes have a receptor which will combine only with three-valent arsenic and not with the five-valent arsenic, as it is present in atoxyl.

The second possibility of the indirect action is due to an inhibition of certain functions of the parasite which have to do with its reproduction or the destruction of some of its constituent parts. This is shown by the often repeated experiment in which, when trypanosomes are mixed in test-tubes with weak dilutions of certain basic dyestuffs, the trypanosomes continue to live and move, but if this mixture is injected into a mouse no infection will take place. B. Busk also proved the correctness of this by showing that certain paramecia live for many weeks in a strong solution of trypan-red but fail to multiply as usual.

A clinching discovery was that of Werbitzki, working under Ehrlich, who found that if trypanosomes were treated with certain dyestuffs (pyronin) they would lose very rapidly their blepharoplast, and that this characteristic was inherited by the offspring for many generations.

This brings us to the consideration of the several methods by which specific substances can bring about a lasting cure. Either the drug destroys all the parasites within the body by its direct and specific action, or the curative substance need kill only a certain number of the parasites, when the remaining ones will be destroyed by the rapidly formed antibodies, as has been shown by Wassermann, Schilling and Mesnil.

These are some of the fundamental theories on which a mighty structure has already been erected. Let us turn now to the practical results achieved.

Trypan-red proved a curative agent only for mice. It had no effect when used in the treatment of larger animals infected with trypanosomes. Since then it has been found by Manteuffel and Uhlenhuth to have a distinct curative action on some forms of spirilla. Nuttall has found that trypan-red is a most effective remedy in the treatment of a widely distributed disease of cattle, *known best under the name of Texas fever. It* has been possible to produce a drug known as arsenophenylglycin which absolutely and lastingly cures with one injection of a proper dose all animals suffering from trypanosome-infection. It has been tried on human beings suffering with sleeping-sickness with varying success. In West Africa von Raven has succeeded in curing a number of cases of human sleeping-sickness with a relatively small dose. On the other hand in East Africa, where the epidemic really is at the present moment, the results have not been so promising. It is hard to imagine what a difficult thing it is to obtain *satisfactory results when the field of action is so far* distant; and more important still, when the dose of a new drug that a human being can safely stand is absolutely unknown.

This can be better appreciated when we know, for instance, that the largest single dose of arsenophenylglycin in East Africa has not exceeded 1 gm., whereas lately in the Congo, Broden has given as much as 4 gm. in one injection. Frequently the specific instructions given by Ehrlich are misunderstood or the individual worker tries out his own theories. It has been Ehrlich's wish that the largest possible dose be given in one injection in fresh cases of sleeping-sickness, that have not been previously treated with other arsenic preparations, principally atoxyl. Notwithstanding these specific instructions many cases have been treated in the later stages of the disease in which permanent changes in the nervous system have already taken place or where the eye has already been damaged by a previous atoxyl treatment. Hence the results are variable and it is easy to see why any statement as to the ultimate value of this drug must be of the most conservative nature. Until a large number of fresh cases of sleeping-sickness, in which the trypanosomes have not yet invaded the spinal canal, are treated with the largest possible dose that can be given to a human being without injuring the body, our final conclusions must be withheld. At the present time in Africa two dyestuffs, trypanosan and agridinium, trypanocidal substances of very great value, are being used in combination with the arsenophenylglycin.

After having produced this latter drug and after it had been shown that syphilis could be transferred to rabbits, an animal that is easy to work with in the laboratory, Ehrlich turned his attention to that group of diseases caused by the spirilla: syphilis, relapsing fever and chicken spirillosis. Only a short time elapsed before dioxydiamidoarsenobenzol, better known as "606," was brought forward. Hata soon found that this drug definitely cured chicken spirillosis in a dose fifty-eight times smaller than the *dosis tolerata*, or the largest dose that could be given with safety to any animal. The spirilla of relapsing fever when present in the body of a mouse were also easily killed by one injection of a small dose. One-seventh of the *dosis tolerata* was sufficient to cure a rabbit infected with syphilis. This relatively small dose caused the *Spirochæta pallida* to disappear completely from the lesions within twenty-four hours. After repeatedly securing these results, Ehrlich decided carefully to start some trials with the substance on human beings. First of all, the drug was sent to Professor Alt, who tried it on dogs, and then on two of his assistants, who volunteered, in order to make sure that it would have no evil effects. It was then tried on patients. To Iversen in Russia, Ehrlich entrusted the substance to treat human cases of relapsing fever, which he did with signal success. With one injection of 0.3 gm. Iversen was able to cure completely for the first time relapsing fever in 90 per cent. of his patients. Within a few hours after the injection, the patient usually suffers a chill of greater or less severity, followed by profuse sweating and a rapid decline of the fever to normal, at which point it remains indefinitely. The action of this drug on such an important disease as relapsing fever we must not allow to be overlooked in the fury and clamor concerning its action on syphilis.

Now to that which no doubt interests us mostly: the results of the treatment thus far obtained in cases of syphilis.

In order to be absolutely sure of his ground and to know exactly when, how, and how much of this substance could be given, Ehrlich has given away over 20,000 doses free of cost to more than 500 selected physicians throughout the world. And all he asked of them was to treat certain classes of patients (which, by the way, many of them have not done), under certain rigid restrictions which he laid down, to the effect that all patients must be confined to bed in a hospital for several days after the injection in order to be under careful observation; that only syphilitics who have healthy hearts and kidneys and sound eyes, that is, in whom no degeneration is present, be treated. From these physicians he now has records of about 6,000 cases and at least 2,000 additional patients have been treated, whose records have not yet been sent in.

The great majority of investigators are astounded at the completeness and rapidity of its action. Naturally some bad results have already been reported, but to find the cause of this has been an easy matter. For instance, we heard some time ago, that certain investigators had seen in a remarkably large percentage of cases paralysis of the bladder and rectum. As soon as their technic became known it could easily be seen that the symptoms were those of methyl-alcohol poisoning, this having been used in too large quantities to dissolve the drug, and possibly being impure at that. It is remarkable that in some of these clinics where hundreds of patients have been treated, no evil effects have been found (aside from a few necroses due to a too superficial injection of the drug, usually when given in suspension). It must also be impressed on every one that Ehrlich has never claimed that this drug is harmless. On the contrary, he has on every occasion stated that in his opinion *a drug will never be found which will completely destroy all the parasites in the body with one or two injections that will be without its dangers.* He has also frequently stated that the therapeutist can only do with his chemical knife what the surgeon does with his steel scalpel.

The entire process of manufacturing the substance is a most difficult one, as it must take place under nitrogen and absolutely without contact with the air, being a highly reduced product. It is kept in little glass tubes in a vacuum. In treating patients each tube must be opened and the contents either dissolved or suspended, as the case may be, and injected immediately.

Now as to the dose: We do not yet know how much can be given to a human being without causing injury. If the dose be calculated from the average animal dose (including the monkey), a human being could be given 5 or 6 gm. at one injection. It is, however, possible that a human being can stand less than even the most susceptible animal, and that half this quantity would be the maximum dose. Even should this prove to be the case, it is clear that the doses now being employed are very small ones (0.3 to 0.8 gm.). One gram has already been given in one intravenous injection without causing any severe reaction. A difference must of course be made between the subcutaneous and intramuscular injections, and the intravenous route; but the doses now being employed are about the same for both. The average doses given are about 0.6 gm. for women and 0.8 gm. for men by the two former, and 0.3 to 0.5 gm. by the last. There are some, however, who never use less than 1 gm. intramuscularly, and 0.8 gm. intravenously.

Under the head of technic it must be mentioned that the substance can be administered in two ways: either in a clear solution or in a neutral suspension. The clear solution of the drug is either acid or alkaline; both of these can cause considerable pain, but their effect is decidedly better than that of the suspension, which is, on the other hand, practically painless. The intravenous injection is not only painless, but in the hands of experienced workers is also without danger. The method of Iversen, recently published, by which he first gives an intravenous injection of 0.5 gm. and two days later an intramuscular injection of a suspension, with the idea of creating a storage of the drug, deserves serious consideration and promises to be the method chosen by careful workers in the future.

The great fear that this drug would have a bad effect on the optic nerve as do atoxyl and acetylatoxyl, experience has proved to be groundless. In about 12,000 cases that have been treated, not one report has been made of injury to the eyes. There have been a number of relapses, due to the smallness of the dose which was administered in the beginning of this work. A repetition of the injection, with a dose even larger than that first given, has also been found to be possible and causes the symptoms again to disappear completely.

It has been found by Hoppe that in the case of the intramuscular injection arsenic can be demonstrated in the urine and feces up to the tenth day, while in the case of the intravenous injection no arsenic can be found on the fourth day. One injection of the drug into infected animals causes the spirochetes to disappear completely within twenty-four hours, and in human beings within three days.

The rapidity of the cure in the primary stage depends on the character of the primary lesion. An erosive one heals completely within four or five days, whereas it requires eight to twenty days for an indurative chancre to be healed. The effects on the secondary symptoms are even better than on the primary. The eruptions disappear in some cases as if by magic, and throat lesions also heal within two or three days. Still more wonderful is the effect of the drug on tertiary lesions. This sounds paradoxical, but Ehrlich thinks it is due to the presence in the body of large quantities of antibodies which have had time to develop. Gummas disappear, and deep ulcers become clean and granulating within a very few days.

These results seem almost incredible, but they are demonstrated daily in the clinic of Wechselmann in the Virchow Krankenhaus, and in other clinics where the drug has been used. Whether dioxydiamidoarsenobenzol effects a permanent cure of syphilis by one injection in the majority of cases, only observations covering a long period of time can show. One thing, however, is now already certain: that it is not only superior to mercury and iodid of potash in the treatment of syphilis, but that it surpasses any known drug on account of the rapidity and apparent thoroughness of its action.

As I have stated above, acid or alkaline solutions can cause considerable pain, while the neutral suspension is practically painless; but its absorption and effect is slower. The amount of pain and discomfort following an injection varies with different patients. In general, it is said that women seem to suffer less than men, and babies apparently have no pain even from a strongly alkaline solution. It has generally been found that on the second or third day after injection, there is a slight rise of temperature which abates again within a few hours, and a slight tenderness at the site of the injection.

It should be mentioned again that "606" is a powerful medicinal agent, and it should be used only after the various technics have been thoroughly studied and mastered. It will never be a drug that can be used altogether in office practice like the frequent injections of the different mercurial salts; and the greatest caution must be exercised by those who use it, after it is given to the medical profession at large. An unattainable ideal would be to have the drug used only by trained genito-urinary specialists, just as a laparotomy is performed to-day only by a surgeon.

It is for this reason that Ehrlich has withheld the preparation from the general profession until many thousand cases have been recorded by competent and careful workers. The records of these cases will act as a bulwark against any future misuse of the drug by the incompetent.

Sandhofstrasse 44.

A CASE OF TORSION OF THE GREAT OMENTUM

W. W. RICHARDSON, M.D.
LOS ANGELES, CAL.

Although the case reports of torsion of the great omentum have greatly increased since the recognition of this condition has become more general, still it is of sufficient rarity to warrant the report of all cases, particularly of the intra-abdominal variety.

History.—R., male, aged 45, referred by Dr. W. V. C. Francis, with the following history: Appendectomy during an acute attack five years ago, with suppuration of the wound; since then the patient has had frequent attacks of abdominal pain of a colicky nature. July 22, 1910, an attack of unusual severity was followed by the formation of a tumor in the right iliac region which was tender to pressure. The temperature varied from normal to 101 F. The patient had not vomited. The bowels had moved daily. August 1, ten days after the commencement of his illness, the acute symptoms had subsided. He complained of little pain and appeared quite comfortable. The evening temperature was 100 F. The pulse was not accelerated. The abdominal walls were thick. There was no tympany nor rigidity. In the right iliac region, just lateral to a broad oblique scar, was a tumor about the size of a fist, slightly tender to touch and apparently superficial to the abdominal muscles. A diagnosis was made of strangulated epiplocele and operation suggested.

Operation and Findings.—The operation on August 3 revealed a mass of strangulated omentum about the size of a duck's egg, within a hernial sac, to which it was firmly adherent. The pedicle, two finger-breadths in thickness, was found continuous with a mass of matted and deeply congested omentum within the abdomen. This intra-abdominal mass was about the size of a goose-egg, firmly attached by old adhesions to the intestines, from which it was separated with difficulty. This mass was, in turn, attached by a pedicle the thickness of the thumb to the remainder of the great omentum. Both pedicles showed plainly the marks of torsion, and both omental masses the effects of venous obstruction. The strangulation was more intense in the intra-hernial mass, but in neither was it sufficient to cause gangrene. The patient probably would have recovered from this attack, as he had from previous less severe ones, as evidenced by the dense adhesions of both masses. Both omental masses were removed and the hernial opening closed by overlapping. Recovery was uneventful.

Adhering to the classification suggested in my previous article,[1] this case belongs to the group of intrahernial and intra-abdominal torsion about two points.

MYIASIS DERMATOSA DUE TO THE OX-WARBLE FLIES

ROBERT T. MILLER, JR., M.D.
PITTSBURG, PA.

Myiasis dermatosa, or infection of the skin with the larval stage of dipterous insects, is fairly common in the tropics though less so in temperate zones, the infection in man most commonly being due to the screw-worm (*Compsomyia macellaria*[2]) or to *Dermatobia hominis*.[3] The following case of human infection due to *Hypoderma lineata*, one of the ox-warble flies and a parasite of cattle almost exclusively, merits report because of its rarity.

Patient.—H. S., a white boy, aged 11, of Roanoke, Va., was admitted to Johns Hopkins Hospital, Baltimore, March 13, 1908, complaining of "swelling under the chin." His family and personal history are negative.

Present Illness.—In December, 1907, the boy noticed a small round lump just below the left knee; this lump was slightly red and very tender especially at night. About two days later the lump had disappeared from the original position and was found some three inches above the knee; the following day it was still higher on the thigh and during successive days it appeared at different points along a course up the abdomen, under the axilla, over the scapula, up the right side of the neck, irregularly about the scalp, finally passing back of the ear and to the submental region which it reached about two months after its first appearance; there it remained stationary, tenderness and pain having meantime greatly decreased. During January, 1908, there appeared in the left groin a second similar lump about the size of a finger-nail. This lump followed a course up the abdomen, under the right axilla and up to the back of the neck, reaching the occipital region in about three weeks, at which time it "came to a head"; the patient picked the scab off and pulled out a "white worm about one inch long and as thick as a darning-needle," alive and moving. These lumps were occasionally stationary but generally migrated three to four inches a day. The pain was not extreme but, with the tenderness and a stinging sensation, was more pronounced at night. At times the lumps would increase to the "size of his two fists" and become very painful.

Physical Examination.—In the submental region was a superficial fluctuating mass 2 cm. in diameter about which there was but little induration or inflammatory reaction. The cervical and axillary glands were generally palpable but small. Hemoglobin 75 per cent. White blood cells 7,700.

Differential count:

Polymorphonuclear neutrophils	54	per cent.
Polymorphonuclear eosinophils	8	per cent.
Mononuclears	30	per cent.
Transitional cells	1.5	per cent.
Unclassified cells	3.5	per cent.

Pulse and temperature normal. Urine negative.

March 13, under cocain anesthesia, the submental mass was incised, disclosing a small amount of finely granular detritus and a white larva lying in a cavity possibly 1 cm. in diameter and situated entirely in the skin. No motion was observed in the larva.

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[1] Torsion of the Great Omentum, THE JOURNAL A. M. A., May 11, 1907, p. 1590.

[2] Stiles: Osler's Modern Medicine, i, 637.

[3] Adams, J. Lee: Tropical Cutaneous Myiasis in Man, THE JOURNAL A. M. A., April 9, 1904, p. 947.

The larva was sent to Washington where, through the courtesy of Professor C. W. Stiles, it was identified as "the larva of *Hypoderma lineata* in the second stage."

The patient reported under date of June 24, 1910, that he was quite well and had had no further trouble.

While there are probably other cases recorded I have found in the accessible literature but one somewhat similar case[4] in which a small lump wandered irregularly over the chest wall, arm and back finally, at the end of five months, arriving on the cheek where it suppurated and was lanced discharging a larva subsequently identified at Washington as the larva of *Hypoderma bovis.* This case occurred in McKean County, Pa.

Hypoderma lineata and *Hypoderma bovis,* the ox-warble flies, are parasites of cattle. According to Curtice[5] the eggs of the former are deposited on the hair of the animal, carried by licking into the mouth and esophagus, where they adhere until the development of the larvæ which burrow through the tissues of the neck arriving at the skin, whence they travel in the skin itself to the back of the animal thus doing permanent injury to the hide. Folsom states that in six months of 1889 *Hypoderma lineata* alone was responsible for a loss of more than three and a quarter million dollars of which almost seven hundred thousand dollars represented injury to the hides.

In the present instance, however, the egg seems to have been deposited in the skin about the left knee, from which point the larva immediately began its migration through the skin without penetrating the deeper tissues. Neither in this case nor in Kane's case were there any constitutional symptoms, the sole inconveniences having been pain and local reaction caused by the burrowing of the larva.

I wish to express my thanks to Professor W. S. Halsted through whose courtesy this case is reported and to Dr. Thomas R. Boggs as well as to Professor C. W. Stiles for identification of the larva.

1018 Westinghouse Building.

REVISED DIRECTIONS FOR MAKING AND USING THE WRIGHT BLOOD-STAIN *

JAMES HOMER WRIGHT, M.D., S.D.
BOSTON

Reports of unsatisfactory results obtained by some workers with the blood-staining fluid which I devised a number of years ago, and recent personal experience with it, have made clear to me that the directions for its preparation and application should be revised in order that certain faults in its working may be corrected or prevented. It is believed that the revised directions which are here given will enable the multitude of users of this reagent to obtain by it brilliant staining effects with more certainty and constancy than heretofore.

PREPARATION OF THE STAINING FLUID

To a 0.5 per cent. aqueous solution of sodium bicarbonate add methylene blue (B. X. or "medicinally pure") in the proportion of 1 gm. of the dye to each 100 c.c. of the solution. Heat the mixture in a steam sterilizer at 100 C. for one full hour, counting the time after the sterilizer has become thoroughly heated. *The mixture is to be contained in a flask, or flasks,* of such size and shape that it forms a layer not more than 6 cm. deep. After heating, allow the mixture to cool, placing the flask in cold water if desired, *and then filter it* to remove the precipitate which has formed in it. It should, when cold, have a deep purple-red color when viewed in a thin layer by transmitted yellowish artificial light. It does not show this color while it is warm.

To each 100 c.c. of the filtered mixture add 500 c.c. of a 0.1 per cent. aqueous solution of "yellowish, water-soluble" eosin and mix thoroughly. Collect the abundant precipitate which immediately appears on a filter. When the precipitate is dry, dissolve it in methylic alcohol (Merck's "reagent") in the proportion of 0.1 gm. to 60 c.c. of the alcohol. In order to facilitate solution, the precipitate is to be rubbed up with the alcohol in a porcelain dish or mortar with a spatula or pestle.

This alcoholic solution of the precipitate is the staining fluid. It should be kept in a well-stoppered bottle because of the volatility of the alcohol. If it becomes too concentrated by evaporation and thus stains too deeply, or forms a precipitate on the blood-smear, the addition of a suitable quantity of methylic alcohol will quickly correct such faults. It does not undergo any spontaneous change other than that of concentration by evaporation, according to my personal experience.

A most important fault encountered in the working of some samples of this fluid is that it fails to stain the red blood-corpuscles a yellow or orange color, but stains them a blue color which can not readily be removed by washing with water. This fault I have recently discovered to be due to a peculiarity of the eosin employed. It can be eliminated by using a proper "yellowish, water-soluble" eosin. Such an eosin I have obtained from R. L. Emerson, 739 Boylston Street, Boston.

APPLICATION OF THE STAINING FLUID TO BLOOD-FILMS

1. Cover the film with a noted quantity of the staining fluid by means of a medicine dropper.
2. After one minute add to the staining fluid on the film the same quantity of distilled water by means of the medicine dropper and allow the mixture to remain for two or three minutes, according to the intensity of the staining desired. A longer period of staining may produce a precipitate. Eosinophilic granules are best brought out by a short period of staining.

The quantity of the diluted fluid on the preparation should not be so large that some of it runs off.

3. Wash the preparation in water for thirty seconds or until the thinner portions of the film become yellow or pink in color.
4. Dry and mount in balsam.

Films more than a few hours old do not stain as well as fresh ones.

95 Mountfort Street.

Treatment of Diphtheria.—That our present method of treating diphtheria by antitoxic serum is defective is the contention of Sir Almroth E. Wright (*Proc. Roy. Soc. Med.,* October, 1910). Instead of adapting itself to the requirements of each individual case, it takes into consideration only the diphtheria bacillus and aims only at securing a high average of success. The method ignores the associated pathogenic organisms, such as the streptococcus, whose presence may involve almost as much danger to life as the diphtheria bacillus itself. The laboratory bacteriologist aims to produce a serum that will conform to accepted laboratory tests and achieve the highest possible antitoxic potency, leaving out of sight the fact that a diphtheric infection is something more than an intoxication by diphtheric poison.

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[4] Kane: Insect Life, ii, 238.

[5] Curtice: Insect Life, ii, 238.

*From the Pathological Laboratory, Massachusetts General Hospital

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1910," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

Articles which have already been mentioned in detail in THE JOURNAL are as follows:

April 2, 1910, page 1142

Filicic Acid, Amorphous.
Filmaron (Merck & Co.).
Filmaron Oil (Merck & Co.).

April 9, 1910, page 1208

Thiol (Riedel & Co.).
Thiol Dry (Riedel & Co.).
Thiol Liquid (Riedel & Co.).
Maltine with Cod Liver Oil (Maltine Co.).
Maltine with Cascara Sagrada (Maltine Co.).
Maltine with Creosote (Maltine Co.).
Maltine Ferrated (Maltine Co.).
Maltine with Hypophosphites (Maltine Co.).
Maltine with Wine of Pepsin (Maltine Co.).
Malto Yerbine (Maltine Co.).
Maltine with Olive Oil and Hypophosphites (Maltine Co.).
Maltine with Phosphate of Iron, Quinia and Strychnia (Maltine Co.).

May 7, 1910, page 1545

Agar-Agar.
Copper Citrate.
Carbosant.

May 28, 1910, page 1789

Chinosol (Chinosol Co.).
[illegible]
[illegible] Co.).
[illegible] Chemical Works).
Desiccated Thymus, Armour (Armour & Co.).
Thymus Tablets, Armour (Armour & Co.).

June 4, 1910, page 1869

Mammary Substance, Armour (Armour & Co.).
Mammary Substance Tablets, Armour (Armour & Co.).
Desiccated Spleen, Armour (Armour & Co.).
Spleen Tablets, Armour (Armour & Co.).
Desiccated Parotid Gland, Armour (Armour & Co.).
Parotid Tablets, Armour (Armour & Co.).
Ovarian Substance, Armour (Armour & Co.).
Ovarian Substance Tablets, Armour (Armour & Co.).
Orchic Substance, Armour (Armour & Co.).
Orchic Substance Tablets, Armour (Armour & Co.).

Aug. 6, 1910, page 503

Nuclein.
Nucleic Acid.
Sodium Nucleate.
Nuclein, Abbott (Abbott Alkaloidal Co.).
Nuclein Solution, Abbott (Abbott Alkaloidal Co.).
Nuclein Tablets, Abbott (Abbott Alkaloidal Co.).
Pituitary Body, Desiccated, Armour (Armour & Co.).
Pituitary Tablets, Armour (Armour & Co.).
Desiccated Corpus Luteum, Armour (Armour & Co.).
Parathyroid Tablets, Armour (Armour & Co.).

Aug. 20, 1910, page 666

Diaspirin (Farbenfabriken of Elberfeld Co.).
Ferratin (Merck & Co.).
Arsenoferratin (Merck & Co.).
Arsenoferratin Tablets (Merck & Co.).
[illegible] (Merck & Co.).
[illegible] Chemical Works).
[illegible] ahy Packing Co.).

Sept. 24, 1910, page 1115

[illegible] (New York Quinine & Chemical Works).
[illegible] vorm. Friedr. Bayer & Co.).
[illegible]
Adrin Troches.
Friable Tablets Protan, 2½ grains.
Friable Tablets Protan, 5 grains.
Friable Tablets Protan, 7½ grains.
Extractum Chinae Nanning (Reinschild Chemical Co.).

THEOPHYLLIN SODIO-ACETATE — Theophyllinæ sodioacetas—Theophyllin sodium acetate $C_7H_7N_4O_3Na+CH_3COONa+H_2O$, is a double salt of sodium acetate and 1, 3-dimethylxanthine-sodium (theophyllin sodium).

It is a white crystalline powder, containing about 60 per cent. of anhydrous theophyllin. It dissolves in about 20 parts of water at 25° C. (77° F.), but is insoluble in alcohol or ether.

Actions and Uses.—It has the diuretic properties of theophyllin reinforced by the diuretic action of sodium acetate, and being more soluble, it is claimed to be more readily absorbed and to be better tolerated than theophyllin.

It is said to be useful in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains), best given after meals.

Proprietary Preparation:

ACET-THEOPHYLLIN-SODIUM—Acet-Theophyllin-Sodium is a name applied to theophyllin sodio-acetate.

Manufactured by C. F. Boehringer & Soehne, Mannheim, Germany (Merck & Co., New York). U. S. patent Nos. 667,381 (Feb. 5, 1901; expires 1918); 757,328, 757,329 (April 12, 1904; expires 1921).

PHARMACEUTICAL PREPARATIONS ACCEPTED FOR N. N. R.

The following dosage forms of accepted proprietary articles have been accepted for N.N.R.:

Syrup Thiocol Roche.—A syrup containing thiocol 10.5 gm. in 100 c.c. (6 grains in a fluidram).

Therapeutics

THYROID

The thyroid is a ductless gland that has so many physiologic activities that it belongs in a class by itself. The desiccated thyroid glands of the Pharmacopeia are offered as a yellow, amorphous powder, having but slight odor or taste, and being but partially soluble in water. This powder is prepared from the thyroid glands of the sheep, and one part of this official powder should represent about five parts of the fresh gland.

Around the thyroid are small gland structures called parathyroids, and in early experiments with animals in which the thyroids were removed more or less of these parathyroids were also removed; consequently, many of the symptoms described as due to thyroid extirpation were really due to the combined removal of both thyroid and parathyroids. It has since been positively determined that these two gland structures have very different physiologic activities and that both are necessary for the health and welfare of the individual.

In 1895, Schiff first showed that dogs could not live when these glands had been totally removed, but would live if part of the thyroid, and, therefore, some parathyroids, were left. It has since been shown that the convulsions are really due to removal of the parathyroids. The adult human thyroid varies considerably in size, depending on the age of the individual, on the sex, and on the locality in which the individual resides. It may vary in weight from 20 to 60 grams. In the female, the gland enlarges during menstruation and pregnancy, and much more frequently becomes diseased (either simply enlarged or atrophied, or hypersecretes or hyposecretes) in the female than in the male. In both sexes the gland more or less atrophies after the age of 50. It has been proved that the thyroid glands are larger in individuals residing at the seashore, and larger in certain regions than in other regions, this being due, possibly, to the character of the water drunk or to the different constituents of the atmosphere. At the seashore there is more iodin in the air, and iodin in any form is a stimulant to the thyroid gland.

Exactly how the thyroid carries on its various activities has not been discovered. The colloid secretion is an important part of its function, and although not directly utilized, it may be used by the gland as a storehouse for the substances that it needs in performing its other work. If it is in large amount the gland is pathologic, and in very large amount a cystic goiter is the condition. If the thyroid, as a whole, underfunctionates, various symptoms and conditions develop, which will be explained later, and if it becomes actually diseased and its secretion becomes greatly diminished or even nil, *cretinism* and *myxedema* are the consequences. If, on the other hand, its normal activities are increased, various symptoms develop, which will also later be described, and if the secretion is excessive the conditions of Graves' thyroid disease, *exophthalmic goiter,* is the consequence. It is certainly readily conceivable and seems to be true from clinical experience that certain activities of the thyroid can be perfect while other of its activities are impaired, and varying symptoms are the results of such physiologic changes. It is probable that certain activities of the thyroid may be permanently increased, diminished, or absent, and yet other activities be normal, and many unexplained clinical conditions follow.

If the activity of this gland, as is true of all the internal secreting glands, is greatly impaired, other glands may take up, or assume, or attempt to do part of the thyroid's work. This seems to be especially true of the hypophysis cerebri when the thyroid is diseased. The opposite is also true, that the thyroid becomes disturbed in pituitary disease.

The physiologic functions of the thyroid may be summed up as follows: Its perfect secretion is necessary to the growth of the body in childhood; it is necessary for normal mental ability; it is necessary for proper nitrogenous metabolism; it is necessary for the proper development and distribution of fat; it is necessary for the proper development of the genital organs and their secretions, for normal menstruation and normal pregnancy, and to prevent nitrogenous toxemias.

If the thyroid is absent or its secretion is insufficient in the child, the child becomes a *cretin,* which means that it shows short, stunted growth; is fat and flabby; has a round, full, expressionless face; has a sluggish mentation; and is a semi-idiot. If the gland is extirpated or its secretion becomes enormously diminished or absent, *myxedema* is the result, a condition occurring most frequently in women after the menopause, in which there is an enormous putting on of weight, mostly fat; a puffy condition of the skin, due to an excessive amount of mucin in its interstices; a gradually diminishing mental ability; the same condition of expressionless, fat, rounded face as seen in the cretin; soon circulatory debility; various maldigestions; and kidney insufficiency.

If any individual does not have normal thyroid secretion his mental ability is impaired, and the administration of thyroid substance will often improve the condition. Disease of the thyroid may even be the cause of some melancholic insanities, and such insanities are sometimes improved by the administration of thyroid.

The administration of thyroid will increase nitrogenous metabolism and increase nitrogenous waste, as shown by the excretion of nitrogen in the urine. When the nitrogenous metabolism is impaired and not sufficient nitrogen is excreted, the feeding of thyroid will increase the nitrogen excreted and improve the general condition. Also in nitrogenous toxemias as occurs in puerperal eclampsia and in uremia from kidney insufficiency, thyroid will often prevent the cerebral toxemia and may aid in curing the condition.

If the thyroid is insufficient in its secretion and not sufficiently diminished to cause myxedema, the weight is increased by large deposits of fat. This is noticed when the thyroid normally diminishes its secretion after the age of 45 or 50, when most individuals put on weight, especially women. It is also noticeable at other ages, especially in women, if the menstruation unaccountably ceases. This deposit of fat is the marked feature of *adiposis dolorosa,* and all of these patients are benefited, the fat is diminished and the weight is decreased by administration of thyroid. *Per contra,* if the thyroid secretion is excessive, as in Graves' disease, the patient loses weight and the fat is diminished.

The thyroid should be fully developed at puberty, and it seems to be one of the predisposing causes of the beginning of menstruation in girls. If the thyroid is not developed and normally secreting the genital organs do not develop or properly functionate. If it does not secrete properly amenorrhea is the consequence. If it over-secretes, menorrhagia is the result. It normally enlarges a few days before the menstrual epoch, and with this hyperemia comes all the exciting and nervous disturbances which increased secretion of the thyroid can cause. The anemic condition termed *chlorosis* bears some close relation to disturbance of the thyroid, and the administration of thyroid is as efficient in correcting chlorosis and in causing normal menstruation (and often more efficient) as iron. The healthy enlargement and increased secretion of the thyroid during *pregnancy* is essential for the proper growth of the fetus and the prevention of nitrogenous toxemias from the double metabolism of both mother and child. If the thyroid does not diminish its secretion after the *menopause,* symptoms of its activity are troublesomely evident, viz., hot flashes and vasomotor dilatation, nervousness, breathlessness, sleeplessness, and palpitation.

The less the ability of the thyroid to functionate normally the less the protein that should be taken into the system; also, much meat tends to keep up the hyperactivity of the thyroid in Graves' disease, the nitrogen seeming to stimulate the gland. Certain it is, such patients do better without meat. On the other hand, in under-secretion of the thyroid as generally seen after the age of 60, the patient demands and requires less and less meat, and is doubtless better off without much meat.

The tendency of the human being from 45 upward gradually to have an increase of blood-pressure, and gradually to develop a tendency to connective tissue formations in various parts of the body, is *pari passu* with the diminished thyroid secretion. Thyroid secretion has a constant activity in lowering blood-pressure, and the administration of thyroid will do the same. If the thyroid is removed from young animals they do not grow, become stupid, have a lower temperature, and unless thyroid is administered, sooner or later die. If an older animal has the thyroid removed, the mental condition becomes sluggish, the muscles become weak, the skin thickens, the hair may fall out, he may or may not lose weight, the temperature is diminished, circulation is impaired, anemia may develop, and if the animal lives long enough sclerosis of the larger vessels may occur.

It has been estimated that there are sufficient blood-vessels passing through the thyroid to allow the whole blood of the body to pass through the gland at least once an hour. If the circulation of the thyroid is enormously increased, as it is in the dilated condition of the blood-vessels in Graves' disease, the blood could go through the gland perhaps twice as frequently as normal, consequently the blood would contain twice as much thyroid secretion as normal. This fact alone would be a cause of the thyroid intoxication and symptoms of exophthalmic goiter.

The colloid secretion consists of two albuminous bodies, and there is a small amount of phosphorus and a nucleoalbumin in the gland. In 1895, Baumann discovered iodin in the colloid secretion and prepared a substance which he called iodothyrin, which is an iodin protein combination which it was supposed would represent the activity of the gland, but has been proved not to act like thyroid substance. While the colloid substance is the chief seat of the iodin content, the thyreoalbumin of the follicular cells has been shown to contain the element (Aeschbacher, *Berl. klin. Wchnschr.*, Feb 12, 1906).

The administration of thyroid will increase the nitrogen, sodium chlorid, and phosphorus output in the urine, while a diminished secretion of thyroid may decrease the output of nitrogen and phosphorus. The thyroid is probably the only organ of the body that contains iodin, and there is more iodin in the thyroids of individuals living at the seashore or where goiter is endemic than in other regions. There is also more iodin in the thyroid during its period of greatest activity, viz., from 15 to 40. The activity of the thyroid is diminished after perhaps its primary stimulation, in *infectious diseases, tuberculosis*, and *chronic alcoholism*, and the iodin is also decreased in these conditions. *Circulatory disturbances* that would cause chronic passive congestion seem to diminish the activity of the thyroid and the amount of iodin it contains. *Carcinoma* has been shown to cause an increased amount of iodin in the thyroid. The administration of iodin is a stimulant to the thyroid gland and will increase the iodin content to a certain amount, and then it is increased no more. This shows that there is no necessity for enormous doses of iodid since its best action is perhaps in stimulation of the thyroid and increasing its iodin content. *Syphilis* and the prolonged administration of mercury seem to diminish the secretion of the thyroid and may cause its early atrophy, hence perhaps the cause of the frequent connective tissue sclerosis and arteriosclerosis that occurs after this disease and its cure by mercury. *Chronic lead poisoning* will cause the thyroid secretion to be diminished. Ordinary circulatory stimulation, especially with such drugs as caffein, tea and coffee, will stimulate the gland to increased activity. So do single doses of alcohol; but not so chronic alcoholism. Arsenic is a stimulant to the thyroid secretion; phosphorus is a stimulant to the thyroid. The glycerophosphates seem to diminish thyroid secretion. The thyroid seems to regulate the calcium metabolism, and it has seemed that thyroid feeding was valuable in the slow deposit of callus about a fracture. Also, the lack of bone growth in the cretin child is so stimulated by thyroid as to suggest an action on calcium or phosphate metabolism.

Various investigators, notably Hunt and Marine, have shown that iodin is necessary for the normal thyroid activity and is an index of the physiologic value of the thyroid secretion (thyreoglobulin). As to whether the administration of iodin will increase the activity of the thyroid gland depends on the gland's ability to store it and not on the method of administration. In other words, the greater the glandular hyperplasia the greater the amount of iodin it will store. The percentage of iodin which the thyroid may contain varies, and the thyroid gland substance obtained from various sources varies greatly in its iodin content, and consequently greatly in thyroid activity.

Reid Hunt (The Journal, October 19, 1907) has shown that the iodin of the thyroid glands of animals not only varies in different animals, but from time to time in the same animal, and varies with the character of the food taken. He has found that while thyroid substance that does not contain iodin is not absolutely inactive, it has a low degree of activity. He has shown that animals are more susceptible to morphin if their thyroids are normally active or if they are given active iodin-containing thyroid stuff. Hence this bears out the clinical findings that patients with Graves' disease often do not bear morphin well, and, as he suggests, this may be the reason that they do not bear ether and chloroform well, their susceptibility to narcotics being perhaps increased by the increased thyroid secretion. As the activity of the thyroid substance depends so largely on iodin, and as the iodin content varies so greatly in the different preparations on the market, it may be well when thyroid treatment is indicated to administer conjointly a small amount of iodin, perhaps best as sodium iodid.

The activity of thyroid, when administered, seems to be parallel with its iodin content, and frequently hyperplastic thyroids will become smaller in size under the administration of any iodin-containing substance. Marine and Lenhart seem to have shown (*Arch. Int. Med.*, November, 1909) that iodin in sufficient amount will prevent enlargement of the thyroid or hyperplasia of the thyroid. This seems negatively to show that goiter develops on account of insufficient iodin, and that the regions where goiter develops are regions where iodin is deficient in the water and air. It seems proved that during the stages of enlargement of the thyroid the iodin is deficient. This does not always of necessity mean that iodin is absent or deficient in the air or water or foods taken, but that for some reason or other it is not assimilated and, therefore, that there is a starvation of iodin.

Although boiling the water or changing the water seems to decrease goiter in some instances, this by no means is an argument absolutely in favor of the infectious origin of goiter. Boiling the water might cause such a deposit or chemical change in the substances in the water as to remove a chemical substance that was antagonistic to the iodin normally taken into the body, or that caused the formation of a compound which would prevent the iodin from being normally absorbed or normally utilized by the thyroid.

Marine and Lenhart report the following findings: The iodin content of the thyroid gland varies inversely with the degree of active hyperplasia; partial removal of the thyroid is normally followed by a compensatory hyperplasia of the remaining portion; iodin starvation increases the amount of the hyperplasia; the administration of iodin causes the hyperplasias of the thyroids of all animals to revert to the colloid state; in whatever form iodin enters the organism, it is stored in the thyroid, and that regardless of how much there is in other tissues; the rapidity of accumulation and the amount of iodin thus taken up by the thyroid depends on its size and the degree of active hyperplasia; and the nitrogen excretion seems to bear a distinct relation to the amount of iodin in organic combination in the system.

It has been shown that thyroid substance is the most active of any iodin-carrying compound as a stimulant to thyroid gland activity. Clinically it has been found that iodin, even in small doses, administered as an iodid, when there is hyperactivity of the thyroid, has caused the same disturbance that desiccated thyroid has caused, when administered under the same conditions. This is not true in patients who have normal thyroids. In other words, iodin has no noticeable effect clinically on the activity of the thyroid in normal individuals, while thyroid feeding will cause its physiologic action in such individuals.

It seems to be a fact that in exophthalmic goiter the thyroid is abnormal either by hypersecreting or by having a perverted secretion, and this seems to be a cause of the disease. The active enlargement may be a compensatory condition caused by a disturbance of nutrition. It seems positively demonstrated and known that hyperplasia of the thyroid occurs at some period in every case of exophthalmic goiter, and the severity of a case of exophthalmic goiter generally varies directly with the degree of colloid and coincident lymphoid hyperplasia. It is stated that the operative mortality of exophthalmic goiter is greater in these instances than in those in which there is marked hyperplasia and a low iodin content. Also, the greater the lymphoid hyperplasia of other glands apparently the greater the mortality. It seems, then, in exophthalmic goiter that the gland is hyperactive, and that its hyperactivity is compensatory for some deficiency in the organism.

Marine claims that the hypersecretion of the thyroid in exophthalmic goiter is a quantitative increase, but really a deficient qualitative secretion, and that the final stage of every case of exophthalmic goiter, if the patients do not soon die, will be myxedema or relative recovery; in other words, under-secretion of the gland. Myxedema and cretinism represent the final stage of a prolonged deficient secretion.

It has been noted that the thyroids of new-born animals do not contain iodin. It has also been noted that when part of the thyroid gland is removed the other part will show an increased amount of iodin. Hunt states, too, that an exclusive meat diet leads to a diminution of the amount of iodin in the thyroid. It has also been shown that if the iodin content of the thyroid is diminished and the thyroglobulin consequently diminished, the thyroid tends to hypertrophy, and a cystic goiter generally shows a diminution of iodin.

Hunt says that the normal swelling of the thyroid gland during menstruation and pregnancy is more marked in goitrous regions than elsewhere, and in these places, he says, there is less iodin in the thyroid. Consequently, the inference should be drawn that a simple hyperplastic thyroid without a great increase in colloid will become normal in size by the administration of a small amount of iodin, sometimes a few doses being sufficient, each perhaps not more than 0.20 gram (3 grains). If, however, the condition was that of marked Graves' disease, iodin would perhaps increase the activity and do no harm.

Either thyroid or iodin may increase the menstrual flow as has often been proved clinically, while large doses of an iodid may cause its cessation.

Hunt has found that the feeding of potassium iodid to animals has diminished their resistance to morphin as does thyroid feeding, because it stimulates the thyroid gland. The stimulation, however, with any iodin soon reaches its limit, as Hunt says, probably when all the thyreoglobulin has its full iodin content. The adult thyroid contains about 0.004 gram of iodin.

Thyroid has no action locally, but acts only after absorption. Its preparations are probably broken up in the stomach into various proteid combinations, but the gastro-intestinal secretions do not impair its activity. If taken on an empty stomach, if in at all large dose, it causes some nausea. Its first action is as a vasodilator, and the blood-pressure is somewhat lowered. While very large doses quickly absorbed might cause cardiac depression and cerebral excitation, such symptoms from one dose are rarely seen. It is only from small doses continued for some time that its physiologic action is evident. The symptoms that it causes when its action is thoroughly in evidence are nervous excitation, restlessness, sleeplessness, palpitation, a feeling of general warmth by vasodilatation, sweating, loss of weight, perhaps loss of appetite, diuresis, and an increase of nitrogen and phosphorus (P_2O_5) in the urine. Such an action from thyroid represents intoxication from it, and is undesirable, and should be avoided. If such action occurs the drug should be given in smaller dose, or perhaps not administered at all.

The iodothyrin of Baumann does not represent the whole of the activities of the thyroid, consequently thyroidectomized animals can not be kept alive or in health by feeding iodothyrin as they can by feeding thyroid substance. From the thyroid have been obtained a nucleoproteid which contains phosphorus and a globulin which contains iodin. This last is termed thyroglobulin, and Oswald (*Münch. med. Wchnschr.*, Aug. 15, 1897) says that it is the iodin globulin that increases nitrogenous elimination, while the nucleoproteids, phosphorus stuff, do not. The iodin of this thyroglobulin varies in amount, while the elements of carbon, nitrogen, oxygen, hydrogen, and sulphur remain constant. If iodid of potassium is fed to an animal before its thyroid is removed the colloid will contain more iodin than if such is not administered. Oswald thinks that, when the thyroglobulin which circulates in the blood is metabolized and broken up, the iodin is not entirely lost, but again returns to the thyroid and may again be used. Investigators seem to have proved that to increase nitrogenous metabolism the thyroglobulin of the thyroid substance fed must contain iodin. They also seem to show that it is the iodin combination that gives the thyroid its antitoxic power. In other words, a thyroid short on iodin does not allow normal nitrogenous metabolism to take place in the body and is not normally antagonistic to either infections or to the toxins of metabolism.

While iodin has been found in the parathyroid glands, it has not been determined that it is constant in these glands. It is possible that the parathyroids may assist in thyroid work if the latter is diseased, and it has been shown that the parathyroids hypertrophy if the thyroid is in large part removed. The same is true of the hypophysis cerebri. The reverse is also true; if the hypophysis is diseased or the parathyroids in part removed, the thyroid secretion seems to be disturbed.

The antitoxic importance of the thyroid secretion is shown by the fact that the urine of animals deprived of their thyroids is much more toxic than of normal.

Directly or indirectly, the thyroid also seems to have some control over the development of connective tissue, as when the thyroid secretion is diminished from any cause or this occurs normally at the age of the thyroid's atrophy (viz., after 45) the connective tissue may increase in various parts of the body.

The apparent size of the thyroid gland is no criterion as to the amount of normal secretion it is furnishing. It may be large and be producing much less than the proper amount of normal secretion, and it may be apparently small or not at all enlarged and be producing a much increased amount of secretion. It is positive that an increased secretion from this gland stimulates and irritates the brain and that a diminished secretion causes mental apathy and mental sluggishness, but whether an increased secretion or abnormal secretion can excite a brain to a mania, or an under-secretion can cause cerebral degeneration, has not been determined.

(To be continued)

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 3, 1910

CHRONIC ANTIMONY POISONING AMONG TYPESETTERS

The occupational diseases form a group of disorders which have not received the attention which their importance merits. Too often it happens that the physician is satisfied with an indefinite or incomplete statement from the patient as to the nature of his vocation or calling. A fact of prime etiologic significance is thus lost and the patient is the sufferer in more than one particular. In considering the common occupational diseases there is also the danger of assuming that atypical symptoms are unusual manifestations of the suspected cause. Further inquiry might elicit valuble clues.

This is well illustrated by the recent studies of Strumpf and Zabel,[1] who have been in a position to follow carefully the physical condition of a large number of typesetters in Strassburg, Germany. One thing which impressed them was the rarity of typical cases of lead-poisoning. They observed, however, with great frequency, a clinical syndrome characterized by a fatigued expression, nervousness, irritability, insomnia, exhaustion especially in the morning hours, vertigo, headache, particularly in the frontal and occipital regions, general or local muscular pains, neuralgic pains in the extremities, nausea and vomiting, and constipation. Mild, moderately severe and severe cases were encountered. The authors find evidence in the literature that this symptom-complex has been looked on as a manifestation of chronic lead-poisoning. The patients showed no elevation of blood-pressure, which, as Krehl has shown, is so common in plumbism from spasm of the arterial walls; the erythrocytes had no basophilic granules; and leukocytosis was lacking. Nor did the urine show traces of albumin or bile. On the contrary, the red count was almost or quite normal even in the severe cases with an absence of basophilic granules and there was leukopenia with eosinophilia between 10 and 25 per cent. (Typesetters without symptoms possessed as high as 9 per cent. eosinophils.) The urine was normal and likewise the blood-pressure.

Since the facts observed suggested no connection with plumbism, Strumpf and Zabel visited the presses where the men were employed, and found, on inquiry, that a mixture containing lead (70 to 80 per cent.), tin (5 per cent.), and antimony (15 to 20 per cent.) was used in covering the type. As tin is without importance toxicologically, their attention was directed to antimony. Rabbits were subjected to chronic antimony poisoning and soon exhibited a well-marked reduction in number of the white cells with increase in the eosinophils up to 25 per cent. The feces of the poisoned rabbits yielded an antimony mirror with Marsh's test.

From this experimental evidence, corroborating their clinical blood-findings as it did, Strumpf and Zabel felt that their patients had been suffering from chronic antimonial poisoning. Since they obtained a positive Marsh test for antimony from the stools of two patients, there can be little doubt that their surmise is correct.

Absence from work for two to three weeks, with exercise in the open air and a milk diet, sufficed usually to restore the patients' health. Thus a new danger to typesetters working with antimonial compounds is brought to light and a distinct contribution added to the growing subject of occupational diseases.

INSANITY IN THE MILITARY SERVICE

Among the medical officers of the Army and of the Navy lately there has been a remarkable growth of interest in psychiatry. In other countries, notably France and Germany, the relation of insanity to conditions of military service has received considerable attention and an extensive literature on the subject is available, but till now the matter has been almost ignored in the United States. The interest which is now being shown in so many different ways is due in part to the influence of the clinical instruction given by Dr. William A. White to the student-officers of the service schools at Washington.

The opportunities for obtaining practical work in psychiatry, even at the best medical schools, are pitifully meager, and it is not at all surprising that the adequate presentation of the subject under such conditions as the Government Hospital for the Insane affords should enlist the attention and, in many cases, the enthusiasm, of the young officers and of the older ones who are assigned from time to time for courses of instruction at the Army and Navy medical schools. One result of the newly awakened interest is that already valuable observations on insanity in the military service are being published.

Some observations of especial interest are those of Passed Assistant-Surgeon Heber Butts[1] and Captain Robert L. Richards, Medical Corps U. S. Army.[2] Dr. Butts gives interesting statistics regarding the 528 officers and men who have been admitted to the Government Hospital for the Insane at Washington from the active lists of the Navy and Marine Corps during the period from Jan. 1, 1899, to June 1, 1910. He comments on some of the relations of race, rank or rating, types of mental disease and etiologic factors in this group of cases. Some of the observations agree with the facts ascertained by statistical studies of admissions to state hospitals for the insane, but there are some interesting variations which must reflect the effects of conditions of military service and which must have great interest for military medical officers when they have been studied at greater length.

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[1] Strumpf and Zabel: Ztschr. f. exper. Path. u. Pharmakol., 1910, lxiii, 242

[1] United States Naval Medical Bulletin, October, 1910; *abstracted* in The Journal, Oct. 22, 1910, p. 1501.

[2] Am. Jour. Insanity, July, 1910; abstracted at length in The Journal, Sept. 3, 1910, p. 875.

In spite of a high prevalence of syphilitic infection among the enlisted men of the Navy, only 5.11 per cent. of all admissions to the hospital were for general paresis. In the New York state hospitals for the insane, paretics form about 19 per cent. of all male first admissions. It is safe to conclude that by far the larger proportion of cases of paresis in sailors occur after they have served their enlistments and left the Navy. The government suffers from the large number of men incapacitated from duty on account of syphilis, but the communities in which the discharged seamen take up their residences subsequently bear the burden of supporting the paretics who find their way into state institutions a dozen years after their careers in the Navy have closed.

The large proportion of cases of dementia præcox, 33.52 per cent. of all admissions in this group, is largely accounted for by the low ratio of paretics and by the youth of the men admitted, the number of cases of involutional psychoses and of senile deterioration, which form so large a part of all admissions to state hospitals, being for these reasons much less.

By far the most important phase of insanity in the military forces is, as Dr. Butts points out, its relation to recruiting. He shows that the expense to the government which enlistment of an insane man occasions, the detriment to the efficiency of the service involved by his presence and the difficulty in deciding whether or not he shall be given the benefits which come to those who have received their disability in "line of duty," all combine to make the determination of the mental status of the applicant for enlistment of the highest importance. In forty-four cases, or nearly 9 per cent. of all in the group considered, mental disease became apparent within thirty days from the time of enlistment, and synopses of typical cases are given in which there was plenty of evidence at the time of enlistment that the men were insane or mentally inferior. This seems to indicate that the present system of examination is inadequate to exclude with a conspicuous degree of success actually or potentially insane men from the Navy and Marine Corps. It is to be remembered that the Navy is particularly exposed to this danger, for, besides the men who enlist for reasons which are actually the outgrowth of delusions, a considerable number enlist for the purpose of escaping from an environment in which they have failed to "make good," and not a few for the purpose of being sent to remote places where they hope to escape the consequences of misdeeds. Among men of this class many are constitutionally inferior and some are insane.

To guard against enlisting such men is an important duty of medical officers. Dr. Butts suggests the advisability of devising some means of giving a practical mental examination, and that accepted candidates be required to serve a six months' period of probation in order to determine their mental status and their aptitude for the service and for the rating in which they have enlisted. We are inclined to think that the factor which will have the most influence in selecting recruits with a smaller percentage of insane and mentally defective men will prove to be the successive classes of young medical officers coming into active duty with practical knowledge of the fundamentals of clinical psychiatry. When a considerable number of the earnest and well-trained young medical men who are at present entering the Navy add to their professional training in other directions such a knowledge of mental diseases as can be obtained at St. Elizabeth's, there will be fewer insane men enlisted, especially of the type of which Dr. Butts gives examples. This work is of so much practical importance that it seems that even more attention might be given it in the courses of instruction at the service medical schools at Washington.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

The first number of the *American Journal of Diseases of Children,* the new periodical to be published by the American Medical Association, will appear in January, 1911. This journal is established at the request of a large number of the leading pediatricians of the country. At the St. Louis session, the Board of Trustees recommended to the House of Delegates that such a journal be established and the recommendation was adopted. At its meeting in June the board decided that the publication should begin in January, and that there should be an editorial board of six, as in the case of the *Archives of Internal Medicine.* At the October meeting the Trustees selected, from those recommended by a committee of pediatricians previously appointed for the purpose, the following Editorial Board: William Fitch Cheney, San Francisco; Frank Spooner Churchill, Chicago; Edwin E. Graham, Philadelphia; John Howland, New York City; Abraham Jacobi, New York City; John Lovett Morse, Boston.

The journal will be of a high order. The character of the members of the editorial board is a guarantee that the articles presented will be creditable to American pediatrics. The interests of the general practitioner are to be kept especially in view, inasmuch as the treatment of children forms a large portion of his work.

The more technical articles of the specialist and the research worker of course will have the prominent place in the journal. Among the contributors to the first number will be Abt, Bevan, Dunn, Fetterolf, Gittings, Hamill and Blackfan, and Jacobi will write an introductory editorial. In addition, there will be comments on live topics in pediatrics, as well as abstracts of current pediatric literature by pediatrists who know what is of real interest.

From a mechanical point of view—paper, printing, illustrations, etc.—the *American Journal of Diseases of Children* will be equal to the *Archives of Internal Medicine*, which means that it will be equal, if not superior, to any other scientific periodical in this or in any other country.

It is needless to say that the new journal is not published as a money-making proposition. It is expected to pay its way; that is all. The Association is now peculiarly well equipped to publish high-class medical periodicals—better even than the majority of the large printing establishments. When the transfer is made to its new building this month, the printing establishment of the American Medical Association will be one of the most complete of the kind anywhere, making it possible to produce the best work in the most economical manner. As a matter of fact, no private individual could produce such a journal as the *Archives of Internal Medicine* at its subscription price, unless he did it for purely altruistic purposes, disregarding business principles. Likewise, it would be impossible, at the proposed subscription price, for a private individual to publish without loss a journal such as the *American Journal of Diseases of Children* will be.

Our European confrères are being led to acknowledge that American medicine, in all its branches, is forging to the front. In fact, they are forced to concede that in some branches we excel. They will soon have to admit that our current periodical literature is also setting a standard. It is intended that the *American Journal of Diseases of Children* shall be a credit to American pediatrics, and we bespeak for it the hearty support of the profession. An announcement, with the subscription price, appears[1] in the advertising pages of this issue.

Current Comment

MEDICAL EDUCATION IN COLORADO

Early in the present year an agreement was made to merge the Denver and Gross College of Medicine, of Denver, with the University of Colorado School of Medicine, the latter school being located at Boulder. By the terms of the merger the work of the first two years would be continued at Boulder, but the work of the clinical years would be conducted at Denver, where better hospital facilities were obtainable. Before such an arrangement could be made, however, it was necessary to secure an amendment to the state constitution, which specifically stated that all the work of the state university should be conducted in Boulder. An amendment, therefore, providing that "all but the first two years of the departments of medicine, dentistry and pharmacy" *might be conducted at Denver*, was submitted to the people at the recent election. Incidentally, perhaps this is the first time that the people individually have had the opportunity to express an opinion in regard to medical education. The result shows that, at least in Colorado, they are in favor of better standards, for the amendment was adopted by a large majority. This amendment permits the merger between the two medical schools to be completed Jan. 1, 1911, according to the terms of the agreement. Thereafter, Colorado will have but one medical school and that will be conducted by the University of Colorado. Two years of collegiate work are required as the minimum of preliminary education, which standard has been adopted also by the Colorado Board of Medical Examiners. Prospects are good, therefore, for the rapid improvement of medical education in Colorado.

FILTRATION OF WATER-SUPPLIES

A recent number of the *South African Journal of Science* contains a paper by Dr. D. M. Tomory on methods of water purification, which indicates that South Africa is alive to the important question of pure water-supplies. The Modder River, which supplies Bloemfontein, cannot be effectively purified by sand filters, since they become clogged by the clay held in suspension. A remarkable improvement was obtained by precipitating with lime and permanganate and filtering rapidly through a mechanical filter, which caused a reduction of the deaths from typhoid fever from 83 per 10,000 in 1896 to 2.75 per 10,000 in 1908. On account of the necessity of increasing the capacity of the plant, the authorities made a tour of inspection in Europe and America to obtain ideas on water purification. In the northern United States and in England, sand filtration was generally found efficient, but in the southern United States and in Egypt conditions analogous to those in South Africa were found, which had been met in similar ways, by precipitation and mechanical filtrations. Tomory concludes that the extraordinary rapidity of mechanical filtration is not accompanied by special risk of pollution when the process is used intelligently in connection with chemical precipitation processes, and that, in cases of non-settling waters which can be purified only by such precipitation, rapid filtration is decidedly preferable as at once more efficient and economical.

HEALTH IN THE TROPICS

The remarkable success of Colonel Gorgas and his co-workers in doing away with the excessive prevalence of infectious diseases in the Canal Zone has been referred to previously.[1] The direct effect of tropical conditions on the human organism cannot, however, be viewed with as much satisfaction as is entertained by Colonel Gorgas if we accept the opinion of an editorial writer in the June *Bulletin of the Manila Medical Society*. This writer presents a rather depressing view of the effect on health of prolonged and permanent residence in tropical countries. He pictures vividly the steady decline in energy and efficiency in those from temperate climates who take up their residence in the Philippines. He remarks gloomily that if one "is so constituted that he can accept this lowered energy efficiency as a conservation process and regulate his life accordingly" he "usually gets along fairly well for a number of years and finally reaches a condition of general sluggishness of mind and body which is characteristic of the majority of those whose lives are spent in tropic climates." In other words, life in the tropics is simply life on a lower plane of accomplishment. The condition is not one of disease, but simply *normal life governed by a different measure of efficiency.* This writer is especially severe on foreigners from temperate climates who attempt to rear children under tropical conditions.

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[1] Advertising page 43, this issue.

[1] THE JOURNAL, Aug. 27, 1910, p. 783.

RED CROSS SEALS—A WARNING

Last week we called attention to the American National Red Cross seals, and heartily endorsed this method of raising funds for a splendid cause. The American National Red Cross, of course, has no control over the idea, and cannot prevent others from adopting it. We probably should have given this word of caution last week, so that physicians would not be misled into endorsing some imitation of the idea without thorough investigation. During the last few days we have received letters from physicians showing that another stamp is being promoted, and at least one physician has been misled. This bears the label of the "National Antituberculosis Association, Chicago," has in its center the word "hope" in white on an orange background, and, instead of the red cross, has the ordinary cross in black. The American National Red Cross has appointed the Illinois State Association for the Prevention of Tuberculosis as its sole state agent for Illinois for the distribution of the Red Cross seals. We have consulted the officers of this organization, who state that this "National Antituberculosis Association, Chicago," is not recognized by them. From the officers of the Chicago Tuberculosis Institute we learn that the organization issuing this black cross stamp has not made known how its funds would be disposed of, and that they do not recommend it to the public for support. It is reported that those who retail these particular stamps make a profit[1] of 40 cents on the dollar; those who sell the American National Red Cross seals do it for altruistic purposes. We again urge physicians to cooperate heartily with the American National Red Cross and the branches of the National Association for the Study and Prevention of Tuberculosis, in their work, and also to discountenance any unauthorized scheme that may mislead the public.

Medical News

CALIFORNIA

Personal.—Dr. S. M. Augustine, San Rafael, has donated $2,000, bequeathed by the will of the late William Patton, toward the construction of a playground for school children of the city.——Dr. Pauline S. Nusbaumer has been appointed city bacteriologist of Oakland.

Offenders Against the Law.—Robert Thompson, San Francisco, said to have been convicted of murder in the second degree by the performance of a criminal operation on a young stenographer, was sentenced to twenty years' imprisonment in the San Quentin Penitentiary, November 19.——Julian MacRae, Los Angeles, is said to have pleaded guilty in the United States District Court, November 12, of the charge of unlawfully using the United States mail, and to have been fined $100.——Jose Benito, Oakland, charged with selling medicine not put up by a licensed pharmacist and manufacturing in violation of the state law, is said to have been found guilty in a justice court, November 17. The defendant claimed that the medicine which he was selling cured consumption, asthma, appendicitis, and every other ailment.

ILLINOIS

Assessed for Hospital Expense.—The board of managers of the Whiteside Public Hospital, Sterling, at its meeting November 1, is said to have assessed the eight practitioners who form the corporation, $50 each, to apply on the expenses of the institution.

Personal.—Dr. Charles M. Noble, Bloomington, who was painfully injured in a machinery accident in Sunflower, Miss., has been brought to St. Joseph's Hospital, Bloomington, and is reported improving.——Dr. Frank L. Clemens has been appointed a member of the medical staff of Graham Hospital, Canton, vice Dr. D. Dennison Kirby, resigned.——Dr. Titus P. Yerkes, Upper Alton, has gone to Rochester, Minn., for a surgical operation.

Small-Pox in the State.—Four cases of small-pox are reported in Anna. The schools have been closed and church services and other public gatherings have been interdicted for a few days.——A case of small-pox was found at a cheap lodging house in Chicago, November 14. The 800 lodgers were vaccinated, the hotel was ordered under quarantine, and the patient was removed to the isolation hospital.——Two cases of small-pox were reported in Peoria, November 17, the first to occur in that city for several months.

Chicago

Poses as Physician.—Louis Jappe was fined $100 in Judge Scovel's court, November 17, for practicing medicine without a license. The defendant is said to have claimed to be able to cure epilepsy in three treatments.

Physicians Aid Strikers.—At a special meeting of the West Side Physicians' Club, Dr. Benjamin H. Breakstone suggested that all members of the club furnish medical aid without cost to any striking garment worker applying for assistance. Sixteen members of the club volunteered their services.

Hospital Closes.—After a continuous existence of more than twenty years the Chicago Charity Hospital, 2407 Dearborn Street, has been forced to close its doors because of lack of support. The twenty-seven patients were removed to their homes or other hospitals November 18. Wesley Hospital has purchased the building and grounds.

Personal.—Dr. William E. Morgan, who was operated on for appendicitis at Mercy Hospital, November 25, is reported to be going on well toward recovery.——Dr. and Mrs. Isaac K. Abt have returned from abroad where Dr. Abt has been making a study of hospital construction, with especial reference to hospitals for children.——Dr. Alice Conklin suffered $3,000 loss in a fire which almost destroyed the apartment building in which she resided, November 18.

Health League Formed.—The Citizens' Health Alliance was organized at Hull House, November 27. The main purpose of the alliance is said to be the improvement of markets, improvement of hygienic conditions in schools, the eradication of insanitary conditions in tenements, the improvement of home conditions of school children, the creation of a public sanitary conscience, and the passage of a new ordinance and laws governing the sanitary conditions. The following officers were elected: president, Dr. Hyman Cohen; vice-president, Miss Jane Addams, Alderman A. W. Fulton, and Rev. Jenkins Lloyd Jones; secretary, Mr. G. A. Graves, and treasurer, Miss L. C. Rose.

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[1] In the form letter which the "National Antituberculosis Association, Chicago." is sending out, signed by John P. Klein, secretary, it is stated: "This association does not ask any club to do this work entirely for charity, as we feel that some compensation should be given for the time and energy used in selling these stamps, and we allow clubs, or individual members of clubs, a commission of 40 per cent., so that on every $10 worth of stamps sold the club or person selling the stamps makes a revenue of $4."

Hospital Notes.—The Union Park Hospital has been incorporated with capital stock of $100,000. The building will be erected on Washington Boulevard west of Union Park, will accommodate seventy-five patients, will be ready for occupancy in a year, and will be under the charge of Dr. Charles C. O'Byrne.——An $80,000 addition to the Norwegian Deaconess' Home and Hospital was formally dedicated November 20. The building is 120 feet long, 50 feet wide, and 4 stories and basement in height, and is to be used as a hospital and deaconess' home. With the old building, the institution now has accommodation for 100 patients and fifty deaconesses. ——Health Commissioner Evans has asked the finance committee of the city council to set aside $1,500 for furnishing the Iroquois Memorial Hospital, the cornerstone of which was laid several weeks ago, and which is now fast nearing completion.——A meeting was held at the Bethel African Methodist Episcopal Church, November 13, to further plans for the establishment of a home for the prevention, cure and treatment of tuberculosis, to be called the Paul Laurence Dunbar Sanatorium. The board of directors consists of Dr. Anna R. Cooper, president; Mrs. L. Waller, secretary; Mrs. F. Turner, treasurer, and Rev. D. P. Roberts.——Plans are under way for the establishment of a day-and-night clinic for tuberculosis patients in connection with the dispensary system of the Municipal Tuberculosis Sanatorium. It is expected that the new sanatorium will be located in the Iroquois Memorial Hospital.

INDIANA

Public Gatherings Interdicted.—As there have been more than 50 cases of diphtheria in Linton during the last two weeks, the city board of health has issued orders that all churches, public schools, moving-picture shows, skating rinks, theaters, pool rooms and billiard halls, and other places where crowds gather be closed.

Appoints Board.—The governor has appointed the following board of trustees for the State Tuberculosis Hospital recently built near Rockville: Dr. Henry Moore, Indianapolis, Dr. Oliver V. Schuman, Columbia City, and Mr. Isaac Strouse, Rockville. The hospital is ready for occupancy but no funds are available for its maintenance.

Personal.—At a recent election in Indianapolis, Dr. Charles O. Durham was elected coroner and appointed the following deputies: Drs. Ralph S. Chappell and M. Cortez Leeth.——Dr. Charles W. Stolzel, for several years in practice at Springhill, Tenn., has returned to Indianapolis.——Dr. Louis A. Bolling, Attica, has become medical director of Mudlavia, Kramer, Ind.

First-Aid Outfit in Patrol Boxes.—Dr. Jewett V. Reed, superintendent of the Indianapolis City Dispensary, has suggested that each patrol box in the city be equipped with a tourniquet and a first-aid package. Many people who suffer from accidents on the streets, have had to wait for the arrival of the ambulance, and by this method the police might apply first-aid dressings at once.

Advertise Tuberculosis Clinics.—A new method for the advertising of the benefits of free tuberculosis clinics will be inaugurated in Indianapolis, December 15. A meeting will be held in Tomilson Hall at which Ex-Mayor Charles A. Bookwalter will preside and which will be addressed by Dr. Charles O. Probst, Columbus, Secretary of the Ohio State Board of Health. Invitations will be issued only to employers and their employees, the object being to show the employers that from a purely business standpoint, cooperation with a clinic will more than repay them.

Recommendations to Legislature.—At a special meeting of the State Board of Health, November 26, the following recommendations to the next legislature were decided on: medical inspection of school children; regulation of building of schoolhouses and providing that every schoolhouse built hereafter must be approved by the State Board of Health and must be sanitary in every particular; additional legislation governing the pollution of streams; additional legislation protecting the water supplies in the state; additional legislation governing the construction of sewers, and lodging in the State Board of Health the supervision of sewer construction so as to guarantee scientific sewerage systems; the enactment of legislation tending to reduce blindness by compelling physicians and midwives to give proper attention to the eyes of children immediately after birth; legislation to control hydrophobia by placing an additional tax on dogs, with which to raise and maintain a Pasteur institute for the free treatment of victims of rabid dogs; giving the inspectors of the state pure food and drug department authority to inspect weights and measures and to file affidavits for maintaining false weights and measures and making it incumbent on prosecuting attorneys to prosecute; amending the pure food law so as to make it possible by insertion of the word "himself" to prosecute the owners of dairies and creameries who are found to be adulterating milk and milk products, and amending the pure food law so as to prevent the traffic in decayed eggs by the insertion of the word "knowingly."

Pure Drugs.—The Indiana Physicians' Pure Drug Association, was formed in Indianapolis, November 20, and the following officers were elected: Dr. Edmund D. Clark, president; Dr. Charles E. Cottingham, secretary-treasurer, and Dr. Frank M. Morrison, Dr. Frederic C. Heath, Dr. Thomas C. Kennedy and Dr. G. H. Roberts, vice-presidents, all of Indianapolis. The objects of this organization are to enforce the state and national pure drug laws as well as to secure better. The reports from the state laboratory show that during the year ended last September, 444 samples of drugs were analyzed. Of these 242 were legal and 202 below the standard. Out of ninety-two samples of spirits of camphor twenty-eight were found to be legal, and 64 illegal. Out of seventy-two samples of tincture of iodin only twenty-six were found to be legal, while forty-six were illegal. In tincture of iron seventeen were legal, and sixteen illegal. In fluid extract of belladonna six samples were legal and seven illegal. When the physicians of Attica received this report they agreed to refuse to buy supplies, even full strength drugs, from those houses shown by these bulletins to be guilty of making any weak drugs. This attitude is characteristic of medical men throughout the state. They refuse to take any chances, and say it is impossible to protect their patients unless the drugs used are pure and full strength. Four of the pharmaceutical manufacturers in the state have been prosecuted for violations of the pure drug laws, but the fines and court costs have not been over $22 in any case. This absurd sum is only a small part of the profit that can be made on the sale of a single barrel of below-standard drugs.

KENTUCKY

New Rule for City Hospital.—At a meeting of the staff physicians of Louisville City Hospital, which was held November 17, over which Dr. Joseph B. Marvin presided and at which Dr. Henry Enos Tuley acted as secretary, a set of rules was adopted governing the physicians and interns of the hospital.

County Society Meeting.—The Hardin County Medical Society held its annual meeting in Elizabethtown, November 10, and elected the following officers: president, Dr. D. Elmo McClure, Sonora; vice-president, Dr. John R. Cowherd, Vine Grove; secretary, Dr. John M. English, Elizabethtown, and delegate to the state medical association, Dr. James C. Mobley, Elizabethtown.

Sanatorium Needs New Buildings.—For the purpose of erecting the necessary buildings for curable cases of tuberculosis and an infirmary for advanced cases, and to pay off the debt incurred before the opening of the institution, the trustees of the Louisville Antituberculosis Association Sanatorium have begun a campaign to secure subscriptions for the $26,000 needed for these purposes.

Meeting of Eastern Kentucky Physicians.—The Eastern Kentucky Medical Association held its annual meeting in Winchester, November 16, and selected Richmond as the place of next meeting. The following officers were elected: president, Dr. J. H. Schultz, Jeffersontown; vice-president, Dr. John P. Huff, Plummer's Landing; Secretary, Dr. Thomas A. E. Evans, Farmers, and treasurer, Dr. William M. Price, Dabney.

Dinner to Dr. Bodine.—Dr. James Morrison Bodine, president of the medical faculty of the University of Louisville, and for forty-one successive years its dean, has been tendered a testimonial dinner to be given at the Seelbach Hotel, Louisville, December 16, to which his pupils and friends throughout the country are invited. Dr. Isadore N. Bloom, Atherton Building, Louisville, is chairman of the committee which has the dinner in charge.

Louisville

Bakeries Inspected.—All of the bakeries in Louisville have been inspected twice by the Pure Food and Drug Division of the Kentucky Experiment Station and the results of the inspection reported to each bakery. All bakers who were heavily scored were given a personal hearing by Mr. R. M. Allen, chief of the division. Of the 150 bakeries which were inspected, thirteen had not made a substantial attempt to comply with the law as found on the third inspection, and prosecutions resulted. Twelve pleaded guilty and one was tried, found guilty, and sentenced to pay a fine of $50 and to imprisonment for ten days in jail. The individual sentenced is said to have conducted his plant in a very filthy cellar, and to have used such ingredients as imitation jellies and anilin egg color substitute. The rest of the bakers are reported as having made most substantial progress in complying with the regulations of the department.

Pure Drug Prosecutions.—The Kentucky Experiment Station, through the head of the Pure Food and Drug Division, R. M. Allen, has brought a number of prosecutions in magistrates' courts in Louisville and has obtained convictions and fines against druggists for selling products below the standard prescribed by the United States Pharmacopeia. The principal products examined and found deficient are as follows: tincture of iodin, seven cases, varying from 47 per cent. to 84 per cent. of the required strength and from containing no potassium iodid to 43 per cent. of the required strength and one sample with undissolved potassium iodid; acetic acid, 76 per cent. of the required strength; tincture of opium, 12.8 per cent. of the required strength; camphor liniment, seven cases, varying from 14 per cent. to 58 per cent. in strength, one sample containing paraffin oil; lime water, being 27 per cent. of the required strength; and precipitated sulphur, 40 per cent. In Covington and Newport other cases are being reported for prosecution; most of them of similar nature with the exception of a firm prosecuted for selling witch hazel containing wood alcohol and a case of another firm for selling zinc oxid containing 90 per cent. of silica. Glycerin, sweet spirits of nitre, collodion, alcohol, citric acid, and tartaric acid are still under consideration because of questions with respect to deterioration or manufacture. The department is trying to determine in each case of a deteriorated product whether it is due to the fault of the manufacturer, the wholesaler, or the dealer, and the division is making an attempt to educate the Kentucky trade with respect to the proper preservation of perishable drug products.

LOUISIANA

Room for More Tuberculosis Patients.—The Louisiana Antituberculosis League announces that there is room in Camp Hygeia for ten more patients in the first stages of tuberculosis.

Sentenced to Life Imprisonment.—Dr. Emmett C. McKowen, Jackson, convicted of the murder of E. K. Judson, New Orleans, an inmate of the State Insane Hospital, Jackson, is said to have been taken to the penitentiary to begin serving his sentence of life imprisonment.

State Health Train.—The health exhibit train, to which The Journal recently referred, is making a tour of the state. Great interest is manifested in the exhibit and in the lectures delivered at the towns at which it stops. The chief subjects dealt with by the lecturers who accompany the train are "Pure Food," "Tuberculosis and Its Prevention," and "Sanitation." The train is equipped with complete anatomic and pathologic exhibits supplied by the Medical Department of Tulane University, the Souchon Museum of Anatomy and the federal and state governments.

Personal.—Dr. John L. Scales, formerly of Alden Bridge, has returned after eighteen months in London and Vienna, spent in special work on diseases of the eye, ear, nose and throat, and associated himself with Dr. Oscar Dowling, Shreveport.—Dr. Gustav Mann, professor of physiology in Tulane University, who sustained serious injury to the head in an accident due to the breaking of a centrifuge in his laboratory October 31, has recovered.——Dr. William J. Headrick, Logansport, is reported to be critically ill.——Dr. Sidney D. Porter, Moreauville, has been placed in charge of the Hookworm Commission of Louisiana.

MARYLAND

Typhoid Fever.—No new cases of typhoid fever have developed among the cadets at the Naval Academy for several days, and it is believed the epidemic is at an end; 23 cases were reported.——During the week ended November 26, sixty cases of typhoid fever were reported in Baltimore with 13 deaths. Of these forty were in the eastern portion of the city and seven are reported in one family.

Society Meeting.—At the annual meeting of the Queen Anne County Medical Society, at Centreville, November 18, the following officers were elected: president, Dr. James W. Stack, Wye Mills; vice-president, Dr. Rowland H. Ford, Queenstown, secretary-treasurer, Dr. H. F. McPherson, Centreville; delegate to the Medical and Chirurgical Faculty of Maryland, Dr. Norman S. Dudley, Church Hill; and alternate, Dr. William G. Coppage, Church Hill.

Personal.—Dr. John E. O'Neill has been appointed assistant superintendent of the State Tuberculosis Sanatorium, vice Dr. E. W. Glidden, resigned to become superintendent of the Georgia Sanatorium. Dr. Glidden was presented with a gold watch by the patients before leaving.——Dr. Robert T. Winterode, pathologist of the State Hospital for the Insane, Catonsville, has resigned to accept the position of superintendent of the State Hospital for Colored Insane.

MISSOURI

St. Louis

In Memory of Dr. Baumgarten.—The Alumni Association of the Medical Department of Washington University has appointed a committee to raise funds for the erection of a memorial tablet of the late Dr. Gustav Baumgarten, to be placed in the Medical Library Building beside those in memory of Dr. Gregory and Boisliniere.

New Contagious Disease Hospital.—The hospital board, on November 16, appointed a committee to investigate and report plans for the new contagious disease hospital to be located on ground owned by the city between the Municipal Sanatorium and the City Infirmary. Authority has been given to equip the Female Hospital buildings as a temporary contagious disease hospital.

New Hospital.—The Sisters of St. Joseph's Convent of Mercy applied on November 21, for a building permit to erect a hospital and convent to cost $350,000 to be known as St. John's Hospital, on a plat of ground recently acquired, bounded by Audubon Ave., Kingshighway, Parkview and Euclid Avenues. The proposed hospital will be a U-shaped, five-story building which will accommodate 250 patients.

Changes in Hospital Staff.—Dr. Meyer Wiener has been added to the staff of the ophthalmologic department of the City Hospital, and Dr. Alexander E. Horwitz to the department of deformities.——Drs. Martin F. Engman and William H. Mook have resigned from the department of deformities and syphilology.——The medical staff, at its meeting for organization, elected Dr. George C. Crandall, president, and Dr. Hanau W. Loeb, secretary, and directed the formation of an executive committee composed of the chairman of each of the twelve departments of the staff.

NEW JERSEY

Gifts to Preventorium.—The Tuberculosis Preventorium for Children, which was removed from Lakewood, N. J., to Farmingdale last April, has received from the estate of Arthur Brisbane 64 acres of land and a free lease for twenty-five years of the Windsor stock farm comprising 240 acres under cultivation. Nathan Straus has contributed $50,000 toward buildings to be constructed on the farm, and the board of health auxiliary connected with the Association of Tuberculosis Clinics has subscribed $4,500 to build an open shack for which it will select the children. The preventorium will require $50,000 more for buildings and additional memberships of $85,000.

NEW YORK

Prizes for Selling Tuberculosis Seals.—The Committee on the Prevention of Tuberculosis of the State Charities Aid Association offers prizes valued at $5,250 to be divided among cities and villages selling the largest number of Red Cross Christmas Seals per capita of school registration before January next.

New County Sanatorium.—Application was made to the Department of Health, November 3, by the Metropolitan Insurance Company for a hearing on its application to build a sanatorium to cost $100,000 for employees afflicted with tuberculosis. The company desires to build the hospital on Mount McGregor at Moreau, Saratoga County.

Appropriation for Health.—The state has appropriated to guard against sickness in the interior of the state, $180,680; for the suppression of epidemics, $7,500; for tuberculosis exhibits, $10,000; for ophthalmia neonatorum, $5,000; for the cancer laboratory, $39,000; for investigations, $10,000; for the antitoxin laboratory, $1,800; for the hygienic laboratory, $14,000. An appropriation of $242,550 has also been made for the health officer of the port of New York.

Ban on Common Drinking Cup.—The State Department of Health is seeking the cooperation of various railroads operating in this state in abolishing the common drinking cup from trains and railroad stations. They have issued a statement pointing out the dangers of this practice and showing that there is no use for its continuance when a cup can be procured from a "penny in the slot machine." They also show that the same dangers accompany the common towel; in fact, that the common towel may be even more dangerous than the common drinking cup.

Practical Instruction of Health Officers.—The State Department of Health announces a new practical course of instruction open to sanitary officers, local health officers, at Albany, beginning December 7, and continuing for three days. The general subject of instruction at this conference will be water and sewage purification. There will be laboratory talks and demonstrations at the State Hygienic Laboratory, Albany, supplemented by inspections of the water filtration plants at Rensselaer and Albany and the sewage disposal systems at Ballston and Saratoga.

New York City

Samuel Alexander Dead.—As we go to press a notice is received of the death, on November 29, of Dr. Samuel Alexander of New York City, professor of clinical surgery in the Medical Department of Cornell University, aged 51.

Harvey Lecture.—The fourth lecture of the present course of Harvey Society Lectures will be given at the New York Academy of Medicine December 10 at 8:15 p. m. by Dr. Harvey Cushing of Johns Hopkins University on "Certain Clinical Aspects of Dyspituitarism."

Crusade on Smoking Autos.—The sanitary inspectors of the health department have the duty of watching for smoking automobiles, and since November 1 100 arrests have been made, and of this number about seventy have been convicted. The fines for the first eleven days of this month amounted to $127.

New Day-and-Night Tuberculosis Camp.—A new tuberculosis day-and-night camp was opened November 15, in the annex of the New York Throat, Nose and Lung Hospital, 233 East Fifty-Seventh Street. The night camp will be for incipient and moderately advanced cases, and the day camp for patients in all stages of the disease.

Two Deaths from Cholera.—The Italian liner, *San Giorgio*, which arrived from Naples and Palermo with 629 steerage passengers, was held at quarantine for five days. A woman and a child died during the voyage of cholera, the woman being buried a few miles off Sandy Hook. Another child supposed to have cholera was taken to Swinburne Island and bacteriologic examinations confirmed the suspicion.

Hospital to Move.—The New York Society for the Ruptured and Crippled has obtained permission to sell its property at Forty-Second Street and Lexington Avenue to the New York State Realty and Terminal Company for $1,350,000. The New York Central Railroad will get a portion of the property. It is the intention of the trustees to establish a new hospital in New York City and a branch hospital in the country.

Many Diseases on Liner.—The Cunard steamer *Carpathia* arrived November 18 from the Mediterranean with a variety of diseases on board. While there was no cholera, scarlet fever wrought harm to the children of the steerage, five having died and been buried at sea. An epidemic of measles also broke out, and there were thirty-four cases when the vessel arrived at quarantine. There were also two cases of erysipelas and one of typhoid fever.

Advisory Board of Statisticians.—The health commissioner has secured the assistance of Drs. Roger S. Tracy, William H. Guilfoy and Cressy L. Wilbur, Washington, D. C., as members of an advisory board of statisticians to the health department. Associated with these physicians are Prof. C. E. A. Winslow of the City College, and Prof. Walter L. Wilcox of Cornell University, the latter of whom is also consulting statistician to the State Board of Health.

For the Prevention of Insanity.—A special committee on mental hygiene has been appointed by the State Charities Aid Association, which will initiate a campaign for the prevention of insanity. The campaign will be conducted on lines similar to the crusade against tuberculosis. Among the members of the committee are Drs. M. Allen Starr, Charles L. Dana, Frederick Peterson, Bernard Sachs, Albert Warren Ferris, William Mabon and William L. Russell. Mr. Homer Folks is chairman of the committee.

Randall's Island Designs Approved.—Designs for the proposed plan of buildings on Randall's Island, at an estimated cost of $4,500,000, have received the preliminary approval of the Municipal Art Commission. Fifteen groups of cottages for the patients will be situated on the southern, southeastern and southwestern slopes of the island, surrounding on three sides the central school house and the general medical and surgical hospital. The isolation hospital for contagious diseases will be situated on the western shore.

New Clinic.—At a recent meeting of the faculty of the University and Bellevue Hospital Medical College it was stated that funds sufficient for equipment and the maintenance for one year of a clinic for minor surgical operations had been secured. The clinic will handle minor operations which cannot secure free treatment in the city hospitals and which few physicians' offices are equipped to handle. The department will offer students better opportunities for practical observation of methods of modern antiseptic surgery than is possible at more serious operations.

Plans of the Milk Committee.—The New York Milk Committee has obtained a certificate of incorporation which sets forth that the organization proposes to improve the milk supply of New York City and educate the public in the proper use of milk for infant feeding and other purposes. The committee will hold a conference December 2 and 3 for the purpose of discussing the most efficient ways of controlling the municipal milk supply. Physicians, sanitarians, research workers and representatives of the municipal, state and national health and agricultural departments have signified their intention of being present at this conference, and the public has been invited to attend.

Sanitary Code Violated.—Inspectors have reported that the sanitary code has been flagrantly violated all over the city, and Raymond B. Fosdick, commissioner of accounts, has undertaken an investigation. It has been found that breadstuffs are being baked under conditions of "unspeakable filth," and that sulphurous acid has been used in the manufacture of candy and to stay the decomposition of meat. Disgraceful conditions have been revealed in the chicken slaughter houses of the east side, and it is stated that these violations could not have occurred except through the inefficiency or venality of certain of the inspectors. Commissioner Fosdick has heard that large sums of money have been paid to politicians in order that certain interests might obtain permits from the Bureau of Food Inspection to the exclusion of other interests. The Bureau of Chemistry of the Department of Agriculture has, through Dr. Harvey W. Wiley, tendered the use of all the facilities of that office in the investigation to be carried on.

NORTH CAROLINA

Medical Legislators.—At the November election the following physicians were elected to office: congress, Dr. John M. Faison, Faison, Duplin County; state senate, Dr. Robert N. Cartwright, Fairfield; house of representatives, Drs. Alfred A. Kent, Lenoir; John H. Mease, Canton; Robert P. Floyd, Louisburg, and Mark B. Pitt, Tarboro.

Personal.—Dr. Julian E. Wood, Elizabeth City, is said to be critically ill with heart disease at his home.——The office of Dr. R. Vance Brawley, Salisbury, was entered by thieves recently and a number of valuable instruments and fixtures were stolen.——Dr. Henry T. Bahnson, Winston-Salem, has been elected honorary fellow of the Virginia State Medical Society.

OREGON

Personal.—Dr. Walter E. Carll, Oregon City, is a patient in St. Vincent's Hospital, Portland, suffering from a diphtheria infection of the eye.

New Professor of Physiology.—The University of Oregon, Department of Medicine, has secured the services of Dr. John Dice MacLaren of the University of Oklahoma, who will occupy the chair of physiology. It is stated that Dr. MacLaren will devote his entire time to teaching and research.

Sanatorium Opened.—After great delay the State Sanatorium for Tuberculosis opened to receive patients, November 21. There were thirty-seven applications received before the opening of the institution. Thus far $30,000 has been spent in the erection of buildings and maintenance. The institution is located in the old State Mute School building near Salem.

PENNSYLVANIA

Hospital for Doylestown.—A gift of a large sum of money to establish a hospital in Doylestown was announced at a meeting of the Doylestown section of the County Medical Society on November 18. The source of the gift has not been made known and there are conditions requiring the citizens of the town to contribute an equal sum.

Personal.—Dr. William C. White, Pittsburg, has resigned the superintendency of Waverly and Hazelwood Antituberculosis Sanatoriums, Louisville.——The Westchester School Board has elected Dr. Jane R. Baker, Embreeville, examining physician of the school children.——Dr. Charles H. Brown has resigned as health officer of Franklin.——Dr. George Boehm, Arona, was thrown over an embankment 200 feet high in a runaway accident, recently, but fortunately was not seriously injured.——Dr. Morris P. Boyle, Glenside, is reported to be critically ill at Germantown Hospital, Philadelphia.

Philadelphia

Diphtheria Closes a School.—Owing to the illness of several pupils with diphtheria, the John Barry Public School was closed for fumigation on November 18.

To Enlarge Hospital.—Howard Hospital, at Broad and Catharine Streets, has purchased adjacent property on Catharine and Webster Streets for $9,866.66.

Free Clinic Opened.—The Jewish Consumptive Institute, Philadelphia, has opened a free clinic at 406 Wharton Street. The clinic is open every day after 12 o'clock.

Temporary Biologic Laboratory.—The Department of Health of Pennsylvania has leased the building at 2000 Arch Street for temporary use as a biologic laboratory.

Hospital Buys Two Lots.—The German Hospital has purchased the property at the southeast corner of Corinthian Avenue and Cambridge Street and the adjoining property on Corinthian Avenue, lot 40.9x84.9, for $8,000. Both lots are directly opposite the hospital.

Measles on Steamship.—Among the steerage passengers of the American liner *Merion*, which docked November 14, two women and eight children were found to be suffering with measles and were taken at once to the Philadelphia Hospital. The rest of the steerage passengers were discharged.

Epidemics Closed City Schools.—On account of scarlet fever and diphtheria, seven of the city's public schools were closed for fumigation, November 21, by order of the Board of Health. In all except one of these institutions at least two or three cases of contagious disease, scarlet fever or diphtheria were discovered.

Dr. Willard's Will.—Among the bequests included in the will of the late Dr. DeForrest Willard are the following. To the trustees of the University of Pennsylvania is left $300 for a free bed in the Children's Orthopedic Department. To the Union Benevolent Association is bequeathed $1,000 in trust, the income to be applied to the Gladys Willard baby fund. The Christian Association of the University of Pennsylvania receives $250 for settlement work, and the Presbyterian Hospital $1,000.

Officers Elected.—At the annual meeting of the Aid Association of the Philadelphia County Medical Society, the following officers were elected: president, Dr. Roland G. Curtin; vice-president, Dr. Jacob R. Shellenberger; secretary, Dr. Lewis H. Adler, Jr.; treasurer, Dr. John B. Turner; directors (for three years), Drs. Oscar H. Allis, John C. DaCosta and Richard A. Cleeman. In addition to these new directors were chosen to fill the places of the late Drs. DeForest Willard and James B. Walker. These were Drs. Samuel D. Risley and William S. Wray.

Ovation for Dr. Smith.—Edgar Fahs Smith, M.D., vice provost of the University of Pennsylvania and professor of chemistry in the same institution, was elected provost to succeed Charles C. Harrison, at a special meeting of the Board of Trustees, November 15. When this fact became known to the students, every one, no matter what his department, left his classroom and for the first time in years all the students assembled in one vast throng. They made their way to the Harrison Chemical Laboratory to show to Dr. Smith their great rejoicing over his election. Many had been named to fill Dr. Harrison's place, but Dr. Smith was the choice of faculty, alumni and students.

New Hospital Recommended.—At a conference of the State Board of Charities with state officials and the heads of the state insane hospitals in the central district, it was decided to recommend state provision for an institution for the care of the tuberculous insane. The superintendent strongly urged that some provision for such persons be made, owing to the necessity of isolating tuberculous patients. The State Commissioner of Health supported the plan and, on his recommendation, the board decided to include provision for a building and grounds similar to the state tuberculosis sanatoriums. The cost will be from $100,000 to $150,000 and state property adjacent to one of the state hospitals will be chosen.

Personal.—Dr. Charles K. Mills, professor of neurology, and Dr. William G. Spiller, professor of neuropathology at the University of Pennsylvania, have been notified of their election as corresponding members of the Gesellschaft der Deutschen Nervenartzen.——Dr. Charles W. Burr has been elected physician to the Orthopedic Hospital and Infirmary for Nervous Diseases, vice Dr. Wharton Sinkler, deceased. The three chiefs of clinics now are Drs. Morris J. Lewis, John K. Mitchell and Charles W. Burr, with Dr. S. Weir Mitchell as chief emeritus.——Dr. Maurice Ostheimer has been elected physician to the medical dispensary of the Children's Hospital, vice Dr. J. Claxton Gittings, resigned, to accept the position of physician to the Children's Hospital.

WISCONSIN

New Dispensary.—The Milwaukee Maternity Hospital and Free Dispensary Association opened its south side free dispensary for the sick poor, 391 Mitchell Street, November 16. A benefit for the dispensary was given at the Majestic Theater, November 22.

Found Guilty.—Fletcher P. Riley, charged with using obscene medical advertising in newspapers, is said to have been found guilty October 28, on five separate charges and fined $25 and costs in each case. His assistant, Benjamin W. Kinsey, is said to have pleaded guilty and to have been fined $50 on each count.

Bubbling Fountains.—The Health Commissioner of Milwaukee has asked that two bubbling fountains be placed at each entrance or inside the lobby of the Auditorium Building for the accommodation of patrons.——Two bubbling fountains were installed on West Water Street in Grand Avenue by the health department recently.

Public Health League Organized.—At a meeting of the people of Kenosha, October 25, plans were completed for the incorporation of the Kenosha Antituberculosis and Public Health League, a reorganization of the Kenosha Antituberculosis Committee. The new organization will be in close affiliation with the state and national organizations.

Personal.—Drs. George J. Jurss, Arthur R. F. Grob and Gustave A. Hipke have been appointed trustees of the Emergency Hospital, Milwaukee.——Dr. George R. McManus, health officer of Stoughton, is reported to be seriously ill with septicemia.——Dr. Frank E. Darling has been appointed assistant health commissioner of Milwaukee, vice Dr. Louis F. Jermain, who, on his return from Europe recently, resigned.——Dr. Richard J. Fleischer, Milwaukee, was seriously injured in a street car collision recently.——Dr. Christian Bergh and family, Whitehall, have returned from Norway.——Dr. Edward W. Quick, Appleton, has removed to Greenbay, where he will be chief of staff of St. Vincent's Hospital.

GENERAL NEWS

New Publishers for Journal.—The Rebman Company, New York City, announces that at the beginning of the year, it will take over the publication of the *Journal of Cutaneous Diseases*.

Meeting of Hawaiian Society.—The annual meeting of the Hawaiian Territory Medical Society was held in Honolulu, October 29-31, and the following officers were elected: president, Dr. W. G. Rogers; vice president, Dr. W. D. Baldwin; secretary-treasurer, Dr. William C. Hobdy, and executive committee, Drs. St. David G. Waters and Clifford B. Wood, all of Honolulu.

Museum of Safety.—The American Museum of Safety, whose object is the conservation of human life, was formally opened at the United Engineering Society Building, 29 West Thirty-Ninth Street, New York City, November 21. The organization proposes to erect a museum of safety and sanitation which will be a clearing house for every worthy device and every worthy thought for safety.

Soo Line Surgeons Hold Meeting.—The fourth annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Surgical Association was held in St. Paul, November 16 and 17, under the presidency of Dr. Justus Ohage, St. Paul. The following officers were elected: president, Dr. Albert E. Halstead, Chicago; vice-president, Dr. Charles F. McComb, Duluth, Minn.; and secretary-treasurer, Dr. John H. Rishmiller, Minneapolis, Minn. The next meeting will be held in Chicago.

Personal.—Dr. Kenneth W. Millican, formerly a member of the editorial staff of The Journal, sailed, November 4, for England on invitation of the *Lancet* to take a position on its editorial staff.——Dr. Samuel T. Darling of the Ancon (C. Z.) Hospital Laboratory and J. J. McGuigan of the Panama Health Office, left, October 24, to investigate the report as to small-pox in the Province of Los Santos.——Dr. H. J. Howard, formerly of Rochester, N. Y., has been appointed chief of the ophthalmological staff of the University of Pennsylvania Medical School and Hospital, Canton, China, and will sail for his new post of duty December 13.

Tri-State Physicians Meet.—The Tri-State Medical Society of Arkansas, Texas and Louisiana held its annual meeting in Shreveport, La., November 15 and 16, under the presidency of Dr. Robert H. T. Mann, Texarkana. The following officers were elected: president, Dr. Thomas P. Lloyd, Shreveport, La.; vice-presidents, Drs. Edward H. Martin, Hot Springs, for Arkansas; Thomas J. Allison, Gladewater, for Texas, and Robert H. Blackman, Monroe, for Louisiana; councilors, Drs. Robert F. Kittrell, Texarkana, for Arkansas; Clarence M. Tucker, Haughton, for Louisiana, and Samuel F. Vaughan, Jonesville, for Texas, and secretary-treasurer, Dr. Jacob M. Bodenheimer, Shreveport, La. (reelected).

Nu Sigma Nu Convention.—The sixteenth biennial convention of the Grand Chapter of the Nu Sigma Nu Medical Fraternity was held in Cleveland November 25 and 26. Applications for charters were received from students in the medical departments of Wisconsin University and of Tufts College; both were refused. The following officers were elected for the ensuing two years: Dr. Torald Sollmann, Western Reserve, to succeed Dr William H. Welch as honorary president; Dr. Frank F. Wesbrook, University of Minnesota, as honorary vice-president; Dr. R. Burton Opitz, Columbia University, honorary secretary; Dr. Harold A. Miller, Pittsburg, honorary treasurer, and Dr. William H. Parks, New York, honorary historian. The acting executive officers elected were Dr. Henry J. Prentiss, Iowa University, president; Dr. Ernest E Irons, Rush Medical College, secretary and treasurer, and Dr. Henry W. Stiles, Syracuse University, grand custodian.

FOREIGN NEWS

Personal.—Dr. A. Pulido, member of the Spanish parliament and one of the editors of the *Siglo Medico*, recently received the decoration of the grand cross of the order del Merito Militar and at the same time was presented with an album containing the autographs of all the army professors as a token of gratitude for his efforts in and outside of the legislature to improve the medical service in the army and enhance its prestige.

Ehrlich's "606" and the Italian Dermatologists.—At the annual meeting of the Associazione dei Dermatologi Italiani resolutions were adopted in regard to Ehrlich's new remedy for syphilis, calling attention to the harm that may result from the way in which it has been advertised and warning the public against interested exaggeration of its therapeutic efficacy. Physicians are urged not to charge exorbitantly for injections of the new drug when it is put on the market, as some are said to have done already.

The Pirogoff Centennial.—The profession in Russia celebrated in various ways, November 26, the hundredth anniversary of the birth of Nicolai Pirogoff, the great Russian surgeon, chief of the military medical service during the Crimean and the Russo-Turkish wars, and long professor of surgery at the Military Academy. His first work, published in 1836, on the anatomy of arteries and fascia not only gave him an international reputation but blazed the way for the surgery of the future. The national medical association of Russia has for its official title, the "Society in Honor of the Memory of Pirogoff."

Deaths in the Profession Abroad.—In addition to the deaths mentioned by our foreign correspondents, the profession has lost Dr. R. U. Krönlein, until the last few months professor of surgery at Zurich, Switzerland, and a frequent contributor to surgical literature, aged 63. The twenty-fifth anniversary of his connection with the Zurich faculty was celebrated by his friends in 1906.——From Buenos Aires is reported the death of two members of the medical faculty of the university, Drs. O. Hernandez and R. H. Vegas, professors of pathology and surgery, respectively.——Dr. A. Hauser, of Teplitz, the leading spirit in the successful organization of the profession in Bohemia in recent years and in numerous lines of preventive medicine and in determining the therapeutic radioactivity of the mineral springs of Bohemia, died suddenly at Teplitz, recently, aged 39. He was one of the first to emphasize the necessity for a press committee as a powerful means to further the interests of the organized profession.——S. Mayer, professor of histology at the German University of Prague.——Dr. E. Below of Hannover, well known as a literary writer, especially on America, where he had long resided, died October 31, aged 65.——Dr. Lombe Atthill, University of Dublin, formerly president of the Royal College of Physicians, Ireland, vice-president of the Dublin Obstetric Society from 1900 to 1903, president of the Royal Academy of Medicine in Ireland, whose work entitled "Lectures on Diseases Peculiar to Women," is well known and ran through many editions, died at Stroud, Kent, September 14, from heart disease, aged 82.——Dr. John Anderson, F.R.C.P., for many years an officer in the Royal Army, Medical Corps, and later a specialist in tropical medicine and a general consulting physician, died at his home in London, October 10, from cerebral hemorrhage, aged 70.——Dr. Sidney Ringer, consulting physician to University College Hospital and Holme professor of clinical medicine in University College, London; the author of "Handbook of Therapeutics"; a clinician and pharmacologist of great repute, died at his country residence in Yorkshire, October 14, aged 75.

MANILA LETTER

(From Our Regular Correspondent)

Manila, Oct. 21, 1910.

New Water-System for Manila

The new water-system for Manila has been inaugurated and accepted by the municipal board. This insures not only more but also vastly better water for Manila's inhabitants. The main reservoir back of the dam, which has a capacity of 500,000,000 gallons, is fed by the waters of the Mariquina River which rises high in the mountains of Central Luzon. For several years the water-supply of Manila has been inadequate and not altogether free from pollution. The protection of the city's new water-supply is guaranteed by the Mariquina reservation water-shed near Bosoboso, where a great area, more than 100 square miles in extent, is a safeguard against pollution of the water flowing into the Montalbon reservoir. This area is absolutely uninhabited; it is owned by the city and no one will be allowed to settle there. No filtration plant is included in the present system, nor is any planned for the immediate future, partly because of lack of funds, and partly because up to the present sanitary engineers have not devised a filtration plant which will deliver water free of amebas to the mains. The amebas, although much larger than many micro-organisms which are taken out by filtration plants, seem to pass readily through each of the various types of filters. As the contamination of the present water-supply is mostly that of amebas, the city is content to let the filtration plant rest till further successful experiments have been made along this line.

Almost No Cholera in Manila

The cholera situation in Manila at present has only one lamentable aspect. The physician from the Bureau of Science who has been carrying on investigations on cholera at the San Lazaro Hospital for infectious diseases is rather disappointed that the number of cases for the past few weeks has not been sufficient even for purposes of investigation. While southern Europe is suffering and excited over epidemics of cholera, Manila, with whose name cholera has so long been closely associated, goes for one, two, three or more weeks without seeing a case; this, too, right in the midst of the rainy season. The director of the Bureau of Health says that the quarter ending Sept. 30, 1910, has been perhaps the most satisfactory from the standpoint of the occurrence of infectious diseases, of any quarter since American occupation. Similar encouraging reports in regard to cholera also have been received from the provinces.

The Philippine Islands Association for the Study and Prevention of Tuberculosis

Through the influence of the Philippine Islands Association for the Study and Prevention of Tuberculosis school children are taught how tuberculosis spreads, its effects, and the personal sanitary precautions necessary to avoid the disease in the Philippine Islands Popular lectures on tuberculosis have been given at the churches and at some of the clubs The police stations, the schoolhouses and other municipal buildings have been used as places for instructing the native how to care for himself These public "clinics" are to be held from time to time in all parts of the city The director of health has declared tubercu' [illegible] ommunicable disease which thus becomes [illegible] to the sanitary code of Manila The pc [illegible] been liberal in subscribing funds and commodities to carry on the work of the society, and these subscriptions have enabled it to open up a simple fresh air sanitarium at the edge of town for treatment and the isolation of advanced cases

New Medical Journal

A new monthly medical journal, the *Revista de Medicina y Farmacia*, has begun publication in Manila This journal is in Spanish and is the official organ of the Colegio Medico-Farmaceutico de Filipinas and to a greater or less degree of that portion of the medical profession in Manila who do not speak English

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Nov 19, 1910

The Falling Birth-Rate

In the quarter ending September the births in England and Wales were in the proportion of 24 9 annually per thousand of the population This is the lowest birth rate recorded in any third quarter since the establishment of civil registration The deaths were in the proportion of 11 4 annually per thousand persons living, which is the lowest death rate recorded

The Institute of Hygiene

The Incorporated Institute of Hygiene is a peculiar and very useful body to which there is probably no parallel in other countries Like many other institutions in this country, where so much is left to private initiative that is done by the government in other countries, it discharges important public functions. The governing body consists of some of the most eminent physicians in the country There is a council of over fifty which devotes itself chiefly to awakening interest and spreading knowledge in regard to hygiene The feeding and rearing of children, the responsibilities of motherhood, the hygiene of the home, food and dietetics, cooking, physical training and home nursing are some of the subjects comprised Many lectures by authorities on these subjects are arranged by the institute Examinations are organized and held periodically in every large center in the United Kingdom and many young women and men enter as candidates to secure the certificate of the institute Many of these candidates are school teachers, who will use their knowledge in teaching Museums, too, have been established as centers of information in regard to foods, beverages, clothing and domestic hygiene Perhaps the most valuable work done by the institute is that of maintaining and raising the standard of purity and quality of food The means are very simple The maker is invited to submit his product for examination, samples are received and are also bought in the open market These are analyzed in the laboratory A report is drawn up and comes before an examining board which sits every month and is composed of members who have attained distinction in analytical work The claims made for the article are considered Those articles which are found to be pure and up to the standard of their claims are granted the certificate of the institute This is issued for only one year and a condition of its renewal is that the purity and standard of the article must be maintained As the results of the analysis are registered at the laboratory a strict watch is kept on the articles certified The greater part of the funds of the institution have been contributed by the members of the council but an appeal is now being made to the public for funds to extend the work to all the large centers of population

The Epizootic of Rat Plague

The systematic destruction of rats in the plague infected districts of Suffolk, described in my last letter [November 26, p 1903] has been carried out with most effective results in the last fortnight Men employed for the purpose of destruction are making house to house visitations to inquire if there are any rats on the premises and to offer to destroy them Persons who are believed to have an unusual number of rats or mice on their premises are receiving notices from the sanitary inspectors requesting them to take measures for the abatement of the nuisance The government has conferred on the local authorities special powers for the destruction of rats in districts where plague is present or suspected or in which there is an unusual mortality among rats A memorandum on plague describing its early symptoms and means of prevention has also been issued As it is now nearly two months since the four cases of plague in man, recorded in previous letters to THE JOURNAL, have occurred and no suspicious cases have followed, the danger of an epidemic of the disease is considered slight The danger of plague attacking Europeans is emphasized in a letter to the *Lancet* by Professor W J Simpson, a well-known authority on tropical diseases, who has been sent by the government to the tropics to inquire into several epidemics of plague and other diseases In the outbreak of plague at Capetown, South Africa, a comparatively small town, he found that the cases were distributed as follows Europeans, 164, colored (Asiatics, etc) 342, and natives 133 Rats died a considerable time before the outbreak, but their connection with human plague was accepted only in a half hearted manner and proper precautions were taken only late in the outbreak

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Nov 11, 1910.

Arsenobenzol (606) at the Society of Dermatology

The Societé de dermatologie devoted its November session almost exclusively to the study of (1) the efficacy of "606," and (2) the technic of the injections Professor Bayet, of Brussels, reported results in 100 cases (he treated 175, but the last seventy five had not been observed long enough to justify a report) Bayet used Wechselmann's procedure with injections in the interscapular region These injections often caused troublesome local consequences, persistent infiltrations, even gangrenes, one of which lasted six months without cicatrizing The general effects were not serious a little fever and kind of arsenical rheumatism, sometimes erythemas Bayet found arsenobenzol efficacious, especially in certain cases, it is perhaps, he thinks, a more active remedy than mercury On the other hand, it fails to act in certain cases of primary and secondary syphilis, offers no guarantee against recurrences, which are frequent, and has scarcely any effect on the Wassermann reaction

Dr Brocq, physician of the St Louis Hospital, reported results which he obtained in the treatment of twenty syphilitics for a month by Ehrlich's method, which he compared with results from the old methods of treatment Brocq thinks that the mercurial treatment has changed somewhat within ten years Gray oil, which on account of the facility with which it can be employed has come into general use, is an unreliable remedy apart from its danger Little by little syphilologists who employ it almost exclusively have become accustomed to obtaining only imperfect results, hence their admiration for the results given by 606" But mercury should be in the form of calomel or injections of the soluble salts, or even of Van Swieten's solution taken internally and associated with iodids, to be fairly compared with "606" One almost never sees a case really intractable to mercury in these forms Some have asserted the superiority of arsenobenzol over mercury because in certain cases an injection of arsenobenzol has had a beneficial effect on conditions which prolonged mercurial treatment would not cure, but in such cases arsenobenzol has had only the effect of arsenic administered in the old forms, such as tonics and sulphurous waters, which after long mercurial treatment often bring about a cure of hitherto refractory conditions One can, therefore, judge of the action of the drug only in entirely untreated cases, in which it appears to be an excellent antisyphilitic remedy which ought to be placed by the side of mercury If it is to become generally used, however, it needs to have the technic of injection perfected Its efficacy is sometimes perhaps superior to that of good mercurial treatment in moist syphilides, in precocious malignant syphilides and in tertiary ulcerations of the mucosæ It is almost equal to that of mercury in certain papulous syphilides and in ulcerating tertiary syphilides of the skin It seems inferior to that of mercury in certain roseolas and in acneiform and tuberculosquamous syphilides No longer periods of immunity from complications seem to be afforded by arsenobenzol than by good methods of mercurial treatment It seems, then, that the new remedy ought not to replace mercury and the iodids in the treatment of syphilis, all the more since the contra-indications to its use are so important that the detractors of the remedy say that arsenobenzol is a remedy for syphilitics who are rather healthy.

Drs. Levy-Bing and Lafay advise the use of oil as the vehicle to diminish the pain which accompanies the injection. Their method is like that recommended by Kromayer in Germany, but a different kind of oil is used. Levy-Bing and Lafay use a mixture of one part of hydrated wool fat to nine parts of poppy oil. These injections of "606" in an oil medium are well borne. There is no pain at the time of the injection, and the patients are not obliged to keep to their beds. Dr. Emery, who has just made an investigation in Germany on results obtained from various present-day methods, admits that injections in oil emulsions seem less painful and irritating than the injections used by Wechselmann, but both have the important disadvantage of sometimes becoming encysted and of being slowly absorbed always. The intravenous injections recommended now by Ehrlich, to be repeated several times followed, after some days or months, by an intramuscular injection, constitute the treatment of choice.

Dr. Milian remarks that although with the oil preparations there is little or no pain at the time of injection, that is really of small consequence, for the immediate pain lasts only a few minutes. What counts is the pain later on, which is produced the third or fourth day. The latter is almost inevitable, for it is due, not to the method employed, but to the absorption of the drug and to the inflammatory reaction provoked in the tissues.

Mortality from Tuberculosis in France

At the Académie de médecine on November 8, Prof. Albert Robin remarked that the statistics which gave France an unfavorable position in the ranks of tuberculosis mortality, attributing to it 150,000 deaths annually, were inexact. According to the official statistics of the ministry of the interior, the number of deaths from tuberculosis in 1908, for example, was only 85,271, or 21.7 deaths per 1,000 inhabitants. Some of the deaths from tuberculosis are recorded under categories such as acute bronchitis, chronic bronchitis, diseases of respiratory organs, etc.; but the number of deaths in these various classes continues to diminish from year to year like the deaths from tuberculosis. The indications are that the campaign against tuberculosis in France is efficacious, although sanitariums are less used here than in other countries.

The Insufficiency of the Equipment of Our Clinics

On his return from Copenhagen, where he had been invited to be present at the inauguration of the new Rigshospital clinics, Prof. J. Teissier, of Lyons, published an article comparing the parsimony of allowances made to our services of instruction and the insufficiency of the equipment of our laboratories with the richness of analogous equipments abroad. Professor Teissier thinks that there is no more need to discuss the respective merits of a corps of *agrégés* appointed after a more or less perfect competition or of a privat-docent system about which some are beginning to complain in Germany and which Italy thinks of replacing by our much-abused *concours d'agrégation*. The first necessity is to provide the necessary equipment and income and to liberate medical instruction from the public charities and from the hospital administrations by creating government establishments for the purpose. Professor Quénu, of Paris, likewise complains of the insufficient funds for clinical instruction; the annual budget of the laboratory attached to Dr. Quénu's surgical service does not exceed $400 (2,000 francs).

Repair of the Damages from the Fire in the Toulouse Medical School

On the day after the fire which destroyed the library of the Toulouse medical school, the ministry of public instruction ordered an investigation of the results of the fire. There were over 150,000 volumes, brochures, theses, etc., destroyed. They were insured for $50,000 (250,000 francs), but they were worth much more. The university is requesting donations of duplicates and original publications from French and foreign universities and institutions of learning—a plan successfully employed by Turin and Ottawa after their libraries were destroyed by fire.

Personal

In its session of November 8, the Académie de médecine elected two foreign associate members, Professors Loeffler, of Greifswald, and Retzius, of Stockholm.

BERLIN LETTER

(*From Our Regular Correspondent*)

BERLIN, Nov. 10, 1910.

The Puro Trial

The court process against the maker of the "Puro" meat juice, which I reported to you last year has had a second trial after an appeal by the convicted manufacturer, Dr. Scholl. After the evidence of various medical experts, both for and against the accused, he was convicted this time not of fraud but of breaking the food law and was condemned to a money fine of $250 (1,000 marks) but not to imprisonment. As a basis of the verdict, it was shown that the statements in the advertisements and on the labels were incorrect, and that the claim of the accused, that these statements had inadvertently been allowed to remain after the change in the manufacture of "Puro," was not credible. No property injury was assumed, as it was considered proved that the material was utilizable for its purpose and that the price was not exorbitant. Dr. Scholl has also appealed from this ruling.

Peculiar Fee Offered to a Physician

In a hunting magazine a few weeks ago, the following amusing advertisement appeared: "Opportunity to hunt a good stag is offered to a well-known authority in diseases of women. As compensation it is required that he make a correct diagnosis of the case of my wife during his stay at the hunting lodge." It is not known whether he has found a gynecologist to undertake the task.

Official Circular Regarding the Use of the Nursing-Bottle

With reference to the question of introducing or rejecting a law like that of France, forbidding the sale of all nursing-bottles with a tube, the question has been asked the Prussian authorities whether regulations on this matter should be established. The minister of education has inquired of his subordinates whether the use of this form of bottle is increasing or diminishing, what its disadvantages are and to what extent industrial interests would be affected by forbidding its use.

Literary Books for Physicians

The members of the Hamburg medical society numbering several hundred, have determined to place in their library a department for literary works which have been written by physicians or in which physicians or medical questions play a large rôle. These books are to be accessible to the members in the same way as the other departments of the library.

VIENNA LETTER

(*From Our Regular Correspondent*)

VIENNA, Nov. 15, 1910.

A Forest and Garden-Zone Around Vienna

Some weeks ago, a new park, constituting another link in the chain of parks and gardens around Vienna, was opened in this city. The idea of ensuring a constant supply of pure air for this city with its sad distinction of being a hotbed of tuberculosis is due to the late mayor of Vienna, with whom the gratitude of the future generations will always associate the "garden-zone." Owing to the enormous growth of the city, the outskirts are being studded with factories and buildings; the prevalent winds, northwest and southeast, have always brought smoke into the heart of the city. The late mayor, in spite of very powerful opposition, caused a law to be passed which prohibited the erection of factories within a radius of 10 kilometers (6 miles) from the center of Vienna; furthermore, an area of some 500 to 1,400 meters (⅓ to 1 mile) has to be kept free from buildings all around Vienna. This space has been converted into a garden ring and when completed, will encircle the capital like a continuous belt of parks, meadows and woods. An abundant supply of water for ponds and ornamental cascades has been provided. The population has been quick in learning the advantages offered them by the splendid air-reservoirs and already this ring is a favorite playground for the children.

A Medical Insurance Company

The repeated occurrences of conflicts between insurance companies and their medical men as well as the high premium demanded by the companies for the insurance of our professional brethren against accidents as well as invalidism, have had an unexpected result. A short time ago, the Medical Organization Committee began to agitate for a medical insurance company, to be run by medical men for medical men, with money coming from the profession. This was achieved very quietly, in spite of great opposition from the existing companies, and now the "Kosmos," as the new society is termed, has taken up its work. Subscriptions came from physicians from all the empire, and the funds at disposal are much larger than originally expected. The premiums of Kosmos are much below those asked by other companies, so that the general public has already availed itself of this opportunity. The fact that medical enterprise was able to make the profession independent in this respect has caused much surprise, and will undoubtedly strengthen its position in other respects, too.

Austrian Cancer Society

After long preparation, the Austrian Cancer Society has held its first meeting recently. Its purpose is twofold: The scientific campaign against malignant growth will be conducted in special cancer-research institutions, and public instruction as to the nature and necessity of the early removal of cancer will be attempted on liberal lines. For the research the leading pathologists and surgeons of the Vienna University (Weichselbaum, Paltauf, Eiselsberg, Schauta) have become members of the committee which will manage the society. The other branch of the work will be carried on by the distribution of popularly worded leaflets dealing with cancer, the institution of lectures for the middle and lower classes both in towns and rural districts and last, not least, the admonition of practitioners to prevent undue loss of time and chance. The late Professor Chrobak caused to be distributed in his gynecologic clinic similar leaflets with a warning as to breast and uterine cancer.

Hungarian District Medical Officers

A law, passed in 1908, requires every community of more than 5,000 inhabitants to provide a district medical officer, who must hold a diploma as doctor of public health. For this purpose the whole country has been divided into sanitary districts. The number of men necessary to fill these posts is 350. But the budget of the Hungarian government provides for only eighty-three such posts. The payment is 1.600 kronen ($320) and no old-age provision. Naturally the standard of sanitation in the rural districts is a very low one in this country. Even the recent outbreak of cholera did not convince the local magistrates of the necessity for unusual measures and proper medical supervision of the country.

Marriages

Frank C. Hayes, M.D., to Miss Lucy Yarborough, both of Camden, Ill., November 9.

Robert C. Hogue, M.D., to Miss Blanche Reebols, both of Norfolk, Va., November 17.

Charles Elliotte Howard, M.D., to Miss Nettie Schmidt, both of Cincinnati, November 23.

Leo A. Parker, M.D., Brooklyn, N. Y., to Miss Helen L. Phelan, at Brooklyn, November 16.

Lewis D. Remington, M.D., to Mrs. Cassie A. Matthews, both of Monrovia, Cal., November 16.

Edward J. Thayer, M.D., to Miss Florence E. Reynolds, both of New York City, November 21.

William H. Schmidt, M.D., Atlantic City, to Miss Mary Grace Clark of Philadelphia, November 23.

Noel C. Womack, M.D., Jackson, Miss., to Miss Jean McLaurin, of Brandon, Miss., November 15.

John Scott Willock, M.D., Pittsburg, Pa., to Miss Anne Elizabeth Bowes, of Baltimore, November 15.

Bonaparte P. Norvell, M.D., Muskogee, Okla., to Miss Bessie Carter, of Palmyra, Mo., November 14.

Charles Thomas Pyles, M.D., Hancock, Md., to Miss Mary Elizabeth Griffith, at Poolesville, Md., November 16.

Robert French Compton, M.D., Charlottesville, Va., to Miss Mary Barbour Rixey, at Charlottesville, November 8.

Charles Victor Haggman, M.D., Concordia, Kan., to Miss Clementine Creager, of Kansas City, Mo., November 12.

George Sheldon Adams, M.D., Yankton, S. Dak., to Miss Valborg S. Smith, of Dell Rapids, S. Dak., November 10.

Granville Hampton Richards, M.D., Port Deposit, Md., to Miss Mary Emma Wright, at Baltimore, November 16.

John Stanley Coulter, M.R.C., U. S. Army, Washington, D. C., to Miss Helen Miller, of Mount Airy, Pa., November 21.

Deaths

James Ross Waggener, M.D. Jefferson Medical College, 1872; a member of the American Medical Association; medical director, U. S. Navy, retired; died in the Corry Hill Hospital, Brookline, Mass., November 17, aged 64. Dr. Waggener entered the United States Navy in 1872, and after thirteen years sea service and sixteen years and two months shore or other duty, was retired as medical director, May 6, 1907, on account of incapacity resulting from an incident of service. He served from 1875 to 1877 in the Naval Hospital, Norfolk, Va., was made passed assistant surgeon in 1875, surgeon in 1887, and attained the rank of captain in 1903. During the Spanish-American War he was attached to the Mare Island Navy Yard, and later was on duty at the Naval Hospital, Cavite, P. I.

Edmund W. Stevens, M.D. Jefferson Medical College, 1884; a member of the American Medical Association, American Ophthalmological Society and American Academy of Ophthalmology and Oto-Laryngology; president of the Denver County Medical Society in 1907; ophthalmologist to the Denver County, St. Anthony's and Mercy hospitals; formerly instructor in diseases of the eye in the Philadelphia Policlinic; died at his home in Denver, October 30, from nephritis, aged 47.

James C. Nidelet, M.D. Missouri Medical College, St. Louis, 1860; surgeon in the Confederate service during the Civil War; one of the founders and for several years professor of anatomy and dean of the faculty of McDowell Medical College, St. Louis; for four years a member of the board of police commissioners, and for two years vice-president of the board; died at his home, November 15, from heart disease, aged 76.

George S. Stein, M.D. University of Pennsylvania, Philadelphia, 1864; a member of the American Medical Association and Mississippi Valley Medical Association; assistant surgeon, U. S. Army during the Civil War; professor and emeritus professor of genitourinary diseases in the Ohio Medical University; died at his home in Columbus, November 19, from heart disease, aged 68.

Robert Gildea O'Hara, M.D. College of Physicians and Surgeons, Baltimore, 1885; formerly an officer in the English service; a member of the Medical Society of Virginia; physician for the Elks' National Home; and chairman of the board of health of Bedford City; died in St. Andrew's Hospital, Lynchburg, November 13, from heart disease, aged 54.

Leslie James Meacham, M.D. Cornell University, New York City, 1902; formerly a member of the American Medical Association and of the New York Academy of Medicine; visiting physician and psychotherapeutist to the Cornell Dispensary, Department of Neurology; died in New York City, October 23, from paresis, aged 50.

John J. Smith, M.D. Long Island College Hospital, Brooklyn, 1891; a member of the Washington State Medical Association; a member of the state legislature in 1899, and of the state senate in 1901, and chosen president of the latter body in 1903; died at his home in Enumclaw, November 12, from typhoid fever, aged 41.

Henry Heidelberg, M.D. St. Louis College of Physicians and Surgeons, 1891; member of the American Medical Association; and president of the Monroe County Medical Society; died at his home in Hecker, Ill., July 2, from cirrhosis of the liver, aged 40.

John Danforth Woodworth, M.D. Rush Medical College, 1852; formerly president, supervisor and member of the school board of Leslie, Mich.; a member of the legislature in 1860; and surgeon of volunteers throughout the Civil War; died at his home in Leslie, November 7, from senile debility, aged 85.

Theodore Rudolph Burgtorf, M.D. Eclectic Medical College of the City of New York, 1891; Long Island College Hospital, Brooklyn, 1894; a member of the Medical Society of the State of New York; was shot and killed by his mentally-deranged wife at his home in New York, November 14, aged 55.

Fred W. Inman, M.D. University of Michigan, Ann Arbor, 1864; a pioneer manufacturer of cereals; one of the founders and president of the *Florida Citrus Exchange*; a surgeon in the army during the Civil War; died at his home in Winter Haven, Fla., November 6, from cerebral hemorrhage, aged 70.

Lutellus Lindley Porter, M.D. Medical College of Ohio, Cincinnati, 1869, a member of the American Medical Association, for many years mine physician and local surgeon of the Northern Pacific Railroad at Roslyn, Wash., died at his home in North Yakima, Wash., November 15, from cancer, aged 63.

Thomas Robinson Little, M.D. University of Pennsylvania, Philadelphia, 1900, a member of the American Medical Association, medical director of the Southern Life and Trust Company, died at his home in Greensboro, N. C., November 15, from the effects of an overdose of morphin, aged 36.

William Forrest Gatchell, M.D. George Washington University, Washington, D. C., 1891, a member of the Medical Association of the District of Columbia, formerly chief clerk of the Steamboat Inspection Service, died at his home in Washington, November 16, from nervous prostration, aged 51.

Joseph Adams, M.D. Western Homeopathic College, Cleveland, 1859, M.C.P. & S., Ont., 1869, a member of the Council from 1869 to 1875, and a member of the Board of Examiners in 1880, Chicago Homeopathic Medical College, 1882, died at his home in Toronto, September 26, aged 85.

Joseph Francis Finn, M.D. College of Physicians and Surgeons, New York City, 1854, first county physician of Hudson County, N. J., a member of the Board of Education of Jersey City from 1899 to 1901, died at his home in Jersey City, November 19, from acute gastritis, aged 77.

James E. Thompson, M.D. Baltimore University, School of Medicine, 1897, died at his home in Throop, near Scranton, Pa., September 18, from the effects of a bullet wound of the head, believed to have been self inflicted with suicidal intent while suffering from melancholia.

Charles W. Rodgers, M.D. University of Virginia, Charlottesville, 1886, a member of the Medical Society of Virginia, for many years a member of the State Board of Medical Examiners, died at his home in Staunton, November 15, from tuberculosis, aged 48.

Albert M. Clinkscales, M.D. Jefferson Medical College, 1877, a member of the American Medical Association, formerly president of the Indian Territory Medical Association, died at his home in Vinita, Okla., November 17, from cerebral hemorrhage, aged 55.

Chester L. Stewart, M.D. Berkshire Medical College, Pittsfield, Mass., 1851, since 1893 president of the Board of Pension Examiners of Randolph, Vt., where he had practiced for fifty-six years, died at his home, November 16, from heart disease, aged 81.

George Sanford Post, M.D. Albany (N. Y.) Medical College, 1899, of Holley, N. Y., a member of the Medical Society of the State of New York, died in the City Hospital, Rochester, October 25, from general septicemia following appendectomy, aged 38.

Alfred Alfonso Harper, M.D. Baltimore Medical College, 1902, a member of the American Medical Association, a member of the board of health of North Adams, died at his home in that city, November 14, from rheumatic arthritis, aged 34.

William F. Waite, M.D. University Medical College, Kansas City, Mo., 1893, a veteran of the Civil War, and a clergyman of the Christian Church, once city physician of Kansas City, Kan., died at his home in that city, November 11, aged 62.

William Francis Shine, M.D. Tulane University, New Orleans, 1858, of St. Augustine, Fla., surgeon in the Confederate army during the Civil War, assistant surgeon U. S. Army, died in the Flagler Hospital, St. Augustine, October 21, aged 71.

Samuel M. Ried, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1878, a member of the Indiana State Medical Association, for ten years health officer of Muncie, Ind., died at his home in Muncie, November 7, aged 68.

James Edgar Sawdon, M.D. Trinity Medical College, Toronto, 1902, M.R.C.S., Eng., and L.R.C.P., Eng., 1908, formerly of Blind River, Ont., but later of Listowel, Ont., died at his home in that place, August 30, from small pox.

Jesse B. McBride, M.D. University of Pennsylvania, Philadelphia, 1865, a surgeon during the Civil War, for many years a resident of Columbia, Pa., died at his home in Washington, D. C., October 27, aged 68.

Joseph R. Whalen, M.D. Louisville Medical College, 1894, demonstrator in anatomy in his alma mater for a year thereafter, died at his home in Carlisle, Ind., November 10, from cerebral hemorrhage, aged 49.

Hanford Benedict (license, Ind., 1897), a member of the Michigan State Medical Association, for three terms postmaster of Springport; died at his home, November 6, from cancer of the liver, aged 73.

Harry W. Bradley, M.D. Detroit College of Medicine, 1909; a member of the Saginaw County Medical Society; died at the home of his parents in Saginaw, Mich., November 16, from typhoid fever, aged 25.

John Wesley Willis, M.D. Meharry Medical College, Nashville, 1902, a colored practitioner of Bowling Green, Ky., died suddenly in a church in that city, October 30, from cerebral hemorrhage, aged 42.

Stiles R. Fox (license, Ind., years of practice, 1897), for thirty-five years a practitioner of Lafayette, Ind., died at St. Elizabeth's Hospital in that city, November 16, from cerebral hemorrhage, aged 62.

Robert Dunlop, M.D. Hospital College of Medicine, Louisville, 1884, for many years physician to the Little Sisters of the Poor, died at his home in Louisville, November 9, from uremia, aged 57.

James Richard Sowers, M.D. George Washington University, Washington, D. C., 1859, a Confederate veteran; died at his home in Warrenton, Va., November 13, from cerebral hemorrhage, aged 73.

William G. Hart, M.D. Vanderbilt University, Nashville, 1877, a member of the State Medical Association of Texas, died at his home in Gordon, November 15, from cerebral hemorrhage.

Henry W. Boorn, M.D. Albany (N. Y.) Medical College, 1866, a member of the Medical Society of the State of New York, died suddenly at his home in Schenevus, November 8, aged 70.

Benjamin Franklin Lisk, M.D. (license, Fla., 1885); of Grahamville, drove into the Ocklawaha River, at the ferry near Grahamville, November 7, and was drowned, aged 73.

James Columbus Ozee (license, Ill.), for thirty-five years a practitioner of Illinois, died at the home of his brother in Mattoon, November 2, from cerebral hemorrhage, aged 69.

Herbert George Chislett, M.D. *Hahnemann Medical College*, Chicago, 1903, of Berwyn, Ill., died in the Hahnemann Hospital, Chicago, November 22, from pneumonia, aged 44.

Daniel Wayland Jones, M.D. New York University, New York City, 1852, a member of the American Medical Association, died at his home in Boston, November 7, aged 81.

William H. Nichols, M.D. Albany (N. Y.) Medical College, 1867, for forty-three years a practitioner of West Sand Lake, N. Y., died at his home in Troy, N. Y., October 31.

J. D. Orr, M.D. Atlanta (Ga.) Medical College, 1878, a member of the South Carolina Medical Association; died at his home in Spartanburg, November 6, aged 52.

Ulysses G. Talley, M.D. Meharry Medical College, Nashville, 1896, a well known colored practitioner of New Orleans; died at his home in that city, November 3, aged 38.

Joseph L. Taylor, M.D. Eclectic Medical Institute, Cincinnati, 1873, died at his home in Logansport, Ind., November 13, from acute gastritis, aged 71.

Charles William Clough (license, years of practice, Mass.); a practitioner since 1888, died at his home in Conway, Mass., November 16, from nephritis, aged 73.

Henry Wheelock Browne, M.D. Harvard Medical School, Boston, 1856, died at his home in Hubbardston, Mich., November 8, from heart disease, aged 78.

Abraham Virgil Conklin, M.D. Eclectic Medical Institute, Cincinnati, 1860, died at his home in Delaware, Ohio, October 28, from pneumonia, aged 77.

John R. Chatham, M.D. Washington University, St. Louis, 1873, died at his home in Tamms, Ill., November 13, from cerebral hemorrhage, aged 68.

John R. McCauley, M.D. College of Physicians and Surgeons, St. Louis, 1891, died at his home in Sulphur Springs, Tex., October 31, aged 57.

Richard K. Gregory, M.D. New York University, New York City, 1860, died at his home in Greensboro, N. C., September 10, aged 74.

Charles J. Ramsey, M.D. Southern Medical College, Atlanta, Ga., 1891, died at his home in Roswell, Ga., November 2, aged 42.

William Henry *Graham, M.D.* *Toronto School of Medicine*, 1871, died at his home in Toronto, June 21, from pneumonia, aged 61.

Pharmacology

RADIO-SULPHO CANCER CURE

"A Bad Smell Capitalized for a Million Dollars"

Of "cancer cures" there seems no end. One of the latest humbugs in this line is known as "Radio-Sulpho" and is sold by the "Radio-Sulpho Company," of Denver. The company is incorporated for $1,000,000 and has for its "consulting physician," E. H. Griffith, M.D., and for its president, one Philip Schuch, Jr., who modestly describes himself as a "chemist and cancer specialist."

Mr. Schuch, Jr., says that he has discovered that the vaccine used in vaccination is the cause of cancer and, further, that he is "able to culture the cancer germs direct from the vaccine." Schuch, Jr., "cures" cancer by means of a combination of "Radio-Sulpho," "Radio-Sulpho Brew" and Limburger cheese. This is not a joke but a "method" recommended by the Radio-Sulpho Company.

Incidentally, Schuch, Jr., has recently leaped into the limelight of newspaper publicity by proposing to introduce at the coming session of the Colorado legislature a bill making it a penal offense to perform an appendicectomy on any but a diseased appendix. Mr. Schuch's love for the medical profession has waned, apparently, since the State Board of Health of Colorado condemned his odoriferous "cancer cure," saying that it is "misbranded, of no medicinal value and that it contains sewer gas."

The patient is instructed to wash the cancer with dilute Radio-Sulpho solution and then apply the "cheese poultice." The poultice is to be made by taking one pound of "real imported" Limburger cheese and kneading it thoroughly with five ounces of pure glycerin. The poultice and washing are to be renewed every twelve hours. Says Mr. Schuch, Jr.:

> "A person that has a weak constitution . . . should never use the Limberger [*sic*] cheese for a poultice, as it is too powerful a magnet. A person must be robust and healthy, aside from the cancer, to stand the powerful drawing of Limberger [*sic*] cheese, prepared as described."

This statement is certainly the most—and possibly the only—conservative one in the booklet which is sent out by the concern. The mere thought of plastering a sick person with such an indescribably nauseating mess as Limburger cheese and glycerin is enough to sicken one. Nor is this all! The nostrum itself has as vile an odor as the cheese. In fact, it reeks with sulphuretted hydrogen (the gas which imparts the distinctive odor to rotten eggs) and the state chemist of Colorado has aptly characterized the nostrum as "a bad smell capitalized for $1,000,000."

The Radio-Sulpho Brew is to be taken internally at the same time that Radio-Sulpho is used as a "wash." Both these products were analyzed by the Colorado State Board of Health, and the state chemist, Dr. E. C. Hill, reports as follows:

> "Radio-Sulpho itself consists of a strongly alkaline solution of sodium sulphid, with a little sodium carbonate and a decided odor of hydrogen sulphid (made presumably by heating together sulphur and commercial caustic soda in water).
>
> "Radio-Sulpho Brew is a weakly alcoholic solution of Epsom salts disguised with a bitter vegetable."

The cost of this evil-smelling treatment is $25.00 a month "and upward." Victims are told that "cancer of the womb and breast are the simplest, easiest and quickest cures made." Schuch, Jr., who apparently has no medical education and no legal right to practice medicine, states in his booklet: "I treat personally the white race only." His charges are: "$100.00 per day or part of a day and all railroad expenses *going* to points east of the Mississippi, or west of Salt Lake, Utah. . . ."

An absurd falsehood, even for a nostrum concern whose stock-in-trade is deceit, is found in the booklet:

> "When you buy our remedies at the prices we herein quote you, you are not paying the FULL COST of the manufacturing and the marketing of the remedies. You are only paying your share, and I, as a philanthropist, bear the remainder and the greater burden."

The thought of a million dollar quack organization selling its products at a loss would be amusing, if the business it is in were not such a cruel and heartless one. Of course those who are desperately or incurably ill with cancer will grasp at any straw, however worthless or dangerous. But that the physical suffering and mental anguish of these unfortunates should be increased by the barbarous malpractice of "cancer cure" fakers and by the blasting of hopes falsely raised, is an outrage that civilized communities should not tolerate.

CHINOSOL—A CORRECTION

One of the most valuable pieces of original pharmacologic work done recently was that reported by Post and Nicoll in THE JOURNAL, Nov. 5, 1910. In general these experimenters showed that the efficiency of many germicides—proprietary and others—in common use, and for which broad claims are or have been made, is as a matter of fact practically *nil.* But in publishing the results of this work, THE JOURNAL unwittingly did the manufacturers of one of the products dealt with an injustice. Among the various preparations with which the investigators experimented was the proprietary antiseptic chinosol. This product was taken up with the others, because, at the time the experiments were made and the article was written, chinosol was advertised and sold as a germicide. In the interim between the acceptance of Drs. Post and Nicoll's article and its publication, however, the Council on Pharmacy and Chemistry proved to the satisfaction of its manufacturer that chinosol is but a very indifferent germicide, although it is an exceedingly powerful antiseptic. As chinosol has not for some time been advertised or sold as a germicide reference to that product should have been deleted from the article in question before publication, but by an oversight, the responsibility for which THE JOURNAL accepts, this was not done. With the present confused ideas on the subject of germicides and antiseptics and the very general misconception that there is little difference between these two classes of products, it is well to call attention to the fact that although a preparation may have little value as a germicide it can still be a powerful and useful antiseptic.

Correspondence

Opportunities for Physicians in Mission Lands

To the Editor:—Thirty vacant fields for medical men and twenty-two for medical women, with no competition and unlimited opportunities for original research, have been brought to my attention by various missionary societies. Some hospitals have had to be closed for lack of workers.

For men with pioneer instincts, there are great fields entirely unoccupied, while for expert surgeons there is work at hand which is already self-supporting. Several internships, from one to three years, are also open for recent graduates.

For women to whom the experience of Dr. Susie Rijnhart, of Thibet, appeals, there are great fields entirely unoccupied, while for experienced surgeons there are hospitals waiting.

All this work is under the missionary societies of the various Protestant churches of the United States and Canada.

The work requires men and women of good health and rugged constitution, not over 35 years of age, graduates of first-class medical schools (in some instances only those who have had both collegiate and professional training, together with either postgraduate or hospital experience), members of some Protestant church, and definitely interested in the religious motives and purpose of medical missions.

Comfortable support is provided by the missionary societies. This includes traveling expenses for physicians and their families, provision for outfit, living quarters, language teachers, etc., in addition to which a salary is paid which is based on what experience shows to be needed to maintain the worker in the highest state of efficiency. This varies in different countries. The net result is the same. It is not a work which will attract one who seeks large financial returns. The work demands those of heroic mold, who want to find the place where their medical skill is needed and where all their training will be utilized to the utmost. The work demands devotion, wide sympathy and earnest purpose. From a purely professional standpoint, these opportunities are unparalleled. A woman graduate of a Canadian university, who went to Arabia a few years ago, reported after a fortnight in the only hospital along the coast of a thousand miles. 'During my visit here we have had twenty operations on the eye, one amputation, the removal of a large tumor and numerous teeth extracted. In medicine we have had pleurisy, tuberculosis, tetanus, small pox, leprosy, paraplegia, different varieties of heart lesions and other interesting cases. In gynecology we have the usual run of inflammations and displacements, with atresia for a specialty. One of the peculiarities of the people here is that they never present themselves for treatment until the disease is far advanced, but of course there is an excuse for them in some cases, as they may have suffered for years before there was a hospital to come to. About 75 per cent. of the people seem to have eye trouble of some sort. Trachoma, trichiasis, ulceration and opacity are the commonest forms, yet inside a week one meets everything from simple ophthalmia to panophthalmitis. In fact, one would have to be a specialist in every branch of medicine and surgery to do justice to the amount and range of material."

Calls are now in my hands from great cities, as well as country districts of China, Africa, Persia, the Philippine Islands, Egyptian Sudan, Arabia, Mexico, Turkey and Korea.

I shall be glad to give further details to any physician to whom this opportunity for service appeals.

WILBERT B. SMITH,
Acting Candidate Secretary, Student Volunteer Movement,
125 East Twenty-Seventh Street, New York City.

Dr. Shepard and the Turkish Bath

To the Editor:—The death of Dr. Charles H. Shepard of Brooklyn, Oct. 29, 1910, deserves more than a passing notice, from the fact that he was literally the founder and promoter of the Turkish bath movement in this country. He was born in Ogdensburg, N. Y., Sept. 25, 1825, and received a medical degree from the New York Medical College in 1848. In 1861 he opened, on a broad scientific basis, the first Turkish bath in America, at Columbia Heights, Brooklyn, and of this he continued in active charge up to the time of his death.

He was a member of the American Medical Association and was secretary in 1893 and 1894 and chairman in 1895 of the section now designated the Section on Preventive Medicine and Public Health. For many years he contributed articles to this Section and was one of the earliest writers in this country on the medical use of water, particularly in the form of Turkish baths. Some of his papers were translated abroad and were widely circulated as graphic presentations of the value of baths in various diseases.

In 1876 he treated a case of hydrophobia with success at the Turkish bath, and this at the time attracted considerable attention, and was the subject of many theories and discussions. Dr. Shepard was one of the first men in this country to write with great positiveness on toxemias as active causes of disease, and he urged the elimination of toxic products through baths. Many of his early papers on this subject were practically forerunners of a literature that is growing constantly.

Dr. Shepard visited all the old and new baths of Europe, and made some studies of the Turkish and Roman baths, which were embodied in lectures and papers that were highly appreciated at the time. At one time he knew every bath in America as well as in Europe, and what was being done there, and was an adviser to the managers. His persistent efforts urging the use of the baths has brought them into popularity in all large sanatoriums and in some insane asylums.

It is understood that Dr. Shepard left a large mass of manuscript on the Turkish bath and on his experience of over fifty years, which will be published in the future. He died from heart failure, after a short period of invalidism, and his body was cremated, according to his wish.

T. D. CROTHERS, M.D., Hartford, Conn.

Electricity in Poliomyelitis

To the Editor:—Dr. Theodore Diller, *commenting on Dr. B. Sach's paper of October 22*, takes up the treatment of electricity (THE JOURNAL, Nov. 5, 1910, p. 1663), and condemns its use in poliomyelitis. If other medical colleges teach as much about electricity and its medical uses as the one I attended their graduates had something to learn after leaving college. I wish to protest against the condemnation of this most useful agent, which at times gives almost magical results even when abused in its use. If one forgets the dose of a medicament or takes up one with which he is unfamiliar, he looks in a "dose" book and prescribes accordingly. If the drug is a liquid it is usually dissolved in an alcoholic solution (and alcohol has been known to make people forget they ever had a pain).

When it comes to the use of electricity, either medicinally or commercially, there is more than one modality. In medicine the induced (faradic) current, the continuous (galvanic) current, given first direct and then make and break on the opposite pole, the static breeze and sparks, during the administration of which the little patient can be held in the nurse's arms; the motor wave current, then the high frequency or step up voltage from either the static or coil, give results that can be seen day to day.

Massage stimulates the nerves where they are kneaded; braces imprison already enervated muscles and thus diminish their size and use; transplantation of nerves or muscles helps in some instances. To use electricity requires time and patience, and if those who have neither of these condemn its use indiscriminately it shows lack of something. The fact that there are so many veiled references to it in literature is proof enough that there is virtue in the use of electricity.

The proper way to ascertain its value for definite presentation would be for the American Medical Association or the American Electrotherapeutic Association to appoint a committee to which scientists outside of medicine could furnish evidence and data not obtainable by the medical man and that would be authoritative.

ALMERIN W. BAER, PH.G., M.D., Chicago.

The Nasal Spatiometer: A Suggested Name for Dean's Septimeter

To the Editor:—I have just read with interest an article in THE JOURNAL (Nov. 26, 1910, p. 1858) by Dr. L. W. Dean, on "Changes in the Nose After Widening the Palatal Arch." It seems to me that Dr. Dean would attract more attention to his septimeter and to his particular line of investigation were he to give his instrument another name. There are septometers on the market. In fact, I described a nasal septometer in the *New York Medical Journal*, July 13, 1901. A nasal septometer is an instrument devised to measure the nasal septum, its thickness at any point. Dr. Dean's instrument was designed to measure, not the septum, but the distance between the septum and the turbinate bone; it might just as well be called a turbinometer. Now were he to name his instrument a "nasal spatiometer" he would more definitely describe the use of his device. The coined word is derived from the Latin words, *spatium*, "a space or distance," and *metrum*, "a measure." I think that Dr. Dean is entitled to differentiate his new device from an instrument that has been on the market for years.

HENRY WALLACE, Glen Ridge, N. J.

Phenol in Herpes

To the Editor:—For the past four years I have treated herpes with an application of a 95 per cent. solution of phenol. As soon as the skin begins to turn white I neutralize the phenol effect with alcohol. In many cases one application suffices; in no case is it necessary to make more than three applications. After one application of the 95 per cent. phenol I dress the lesions with a simple ointment like zinc oxid. It is surprising how quickly it will relieve the pain, itching and burning. The vesicles shrivel and dry up in a very short time leaving a dry crust. I first used it in herpes progenitalis with such satisfactory results that I was led to try it for herpes zoster, in which it gave equally satisfactory results. Looking over the literature of herpes, I have not been able to find phenol mentioned in its treatment.

G. P. COOPERNAIL, Bedford, N. Y.

Queries and Minor Notes

Anonymous Communications will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

USE OF THE WORD 'NUTRIANT'

To the Editor —In reading the recent edition of Wood's "Therapeutics,' pp 12 and 283, I came across the word "nutriant" I fail to find this word in any of the dictionaries at hand Is it a recognized word, and if so, what does it mean? Or is it a mistake for 'nutrient' ? Medicus, Baltimore

Answer —We do not find 'nutriant recognized by any authorities on the English language The word "nutriant," of course, could not be derived directly from the verb *nutrire*, the present participle of which is *nutriens*, from which we get 'nutrient " The only verb from the same root as *nutrire* given in Harper's Latin Dictionary is *nutricare*, 'to suckle, nourish, support, sustain," present participle *nutricans* The word "nutriant' appears to be applied by Wood, not to substances which nourish—nutrients—but to substances which increase nutrition A word with this meaning would be a useful addition to the English language, but "nutriant," since it differs from "nutrient" by only the vowel of the last syllable, has the disadvantage that it would be taken for a misprint for the latter in nine cases out of ten

Dr Horatio C Wood Jr, in reply to our letter regarding the matter, writes "This word was coined many years ago to signify drugs which affect the metabolic, or nutritive, processes The ending 'ant' was chosen to be in harmony with such terms as cardiant,' 'expectorant 'eliminant,' 'digestant,' etc I recognize the force of your statement, that the word is so nearly like 'nutrient as to lead to possible confusion, but it has been employed for nearly twenty years and the present instance is the first which has come to my notice of any uncertainty as to its meaning"

The Public Service

Medical Corps, U. S. Navy

Changes for the week ended Nov 26, 1910

Brister, J M, surgeon, detached from the naval academy and ordered to duty at the naval hospital, Annapolis, Md

Fauntleroy, A M surgeon, detached from the naval hospital, Philadelphia, and ordered to the *Solace*

Iden, J H surgeon, detached from the naval hospital, Annapolis, Md, and ordered to the *Washington*.

Field, J G, surgeon detached from the *Washington* and ordered to Washington, D C, for examination for promotion and to await orders

Allen, A H, P A surgeon detached from the naval hospital, New York, and ordered to the *Washington*

Robnett, A H, P A surgeon, detached from the naval recruiting station, Cedar Rapids, Iowa, and ordered to the marine corps rifle range, Winthrop, Md

Longabaugh, R I, P A surgeon, detached from the *Washington* and ordered to the navy recruiting station, Cedar Rapids, Iowa

Heiner, R G, P A surgeon, detached from the naval hospital, Norfolk, Va, and ordered to the naval academy

Strine, H F, P A surgeon, ordered to duty at the naval hospital, Norfolk, Va

Medical Department, U. S. Army

Changes for the week ended Nov 26, 1910

Marshall, John S, examining and supervising dental surgeon, reported for duty at Columbus Barracks, Ohio, November 19, from leave of absence

Siler, Joseph F, captain, and Davis, William R, captain, Nov 19, 1910 will proceed at the proper time to West Point, N Y, and report on May 1, 1911, for duty until June 1, 1911, when each officer will return to his proper station

Foster, George B Jr, lieutenant November 19, ordered to proceed to Philadelphia on official business pertaining to the medical department

Taylor, Blair D, colonel, November 19 on his own application is retired from active service April 30, 1911, after more than thirty five years service Granted leave of absence from January 1 to and including April 30, 1911

Harris, Henry S T, lieut. col, relieved from duty at headquarters, Department of California, and will assume charge of the medical supply depot in San Francisco, relieving Col. D M Appel

Appel, Daniel M colonel after being relieved will proceed to Atlanta, Ga, and report not later than Dec 31, 1910 to the commanding general Department of the Gulf for duty as chief surgeon of that department

Eber, Albert H, lieutenant Medical Reserve Corps, ordered to Fort Dade, Fla, not later than December 1, for temporary duty during absence of Lieut J R Hereford, Medical Reserve Corps On completion of this duty he will return to his station, Fort Moultrie, S C

Long, Charles J, dental surgeon, relieved from duty at Fort Adams, R I, at expiration of his leave and ordered to Fort Andrews, Mass, for duty

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Nov 23, 1910

Austin H W surgeon granted three days' leave of absence from Nov 17, 1910 under paragraph 189, Service Regulations

Carter H R surgeon, directed to rejoin station at Louisville, Ky, reporting at bureau en route

Banks, C E, surgeon, granted four days' leave of absence from Nov 19, 1910

Williams, L L surgeon, granted seven days' leave of absence from Nov 14 1910 under paragraph 189, Service Regulations Granted one day s extension, Nov 21, 1910

Stoner, J B, surgeon, granted six days' leave of absence en route to station

Wertenbaker, C P, surgeon, detailed to represent the service at the meeting of the Seaboard Medical Association, to be held in Kinston, N C, Dec 6-8, 1910

Brown B W, surgeon, granted one month's leave of absence on being relieved by Surgeon F W Mead

Lavinder, C H P A surgeon, directed to inspect the bacteriotherapeutic laboratory at Asheville, N C, and to attend the meeting of the Seaboard Medical Association, to be held in Kinston, N C, Dec 6 8 1910

Lumsden, L L P A surgeon, granted seven days' leave of absence from Nov 16, 1910, under paragraph 191, Service Regulations

Burkhalter J T, P A surgeon, granted one month s leave of absence from Dec 17, 1910

Boggess J S, P A surgeon, leave of absence for one month from Nov 14, 1910 amended to read from November 21

Creel R H, P A surgeon, relieved from duty at Chicago and directed to report at bureau for temporary duty Nov 21, 1910 Granted three days' leave of absence en route

Hotchkiss, S C, A A surgeon, granted seven days' leave of absence en route to station

Lyons, R H, A A surgeon, directed to proceed to the gulf quarantine station for temporary duty

Appleton T J, A A surgeon, granted seven days' leave of absence under paragraph 210, Service Regulations

Bailey C A A A surgeon, directed to proceed to St John, N B, on or about Nov 22, 1910, for medical examination of aliens

Duke, B F A A surgeon, granted twenty-five days' leave of absence from Nov 11 1910

Fraizy, T C, A A surgeon, granted ten days' leave of absence from Nov 22, 1910

Gill, S C A A surgeon, granted twenty nine days' leave of absence from Dec 3 1910

Gregory, George A, A A surgeon, granted thirty days' leave of absence from Nov 10 1910

Moncure J A A A surgeon, granted thirty days' leave of absence from Nov 17, 1910

Nute A J, A A surgeon, granted thirty days' leave of absence from Nov 7, 1910

Sexton Leo L, A A surgeon, granted seven days' leave of absence from Oct 5, 1910, under paragraph 210, Service Regulations

Sinclair, A N, A A surgeon, granted twenty six days' leave of absence from Dec 6, 1910

Board of medical officers convened to meet at the marine hospital, Port Townsend Wash, Nov 21, 1910, for the purpose of making a physical examination of an officer of the Revenue Cutter service Detail for the board Surgeon P M Carrington, chairman, Surgeon J. H Oakley, recorder

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

INFANT MORTALITY AND BIRTH REGISTRATION

One of the most important reports presented at the recent meeting of the American Association for the Study and Prevention of Infant Mortality was that of the Committee on Birth Registration, consisting of Dr Cressy L Wilbur, chairman, Dr Wilmer R Batt, Pennsylvania, Dr Charles V. Chapin, Rhode Island; Dr John S Fulton, Maryland; Dr. John N. Hurty, Indiana, and Dr. William C. Woodward, District of Columbia The committee stated that study and knowledge of infant mortality should precede efforts for the prevention of such mortality, since the nature and exact extent of the causes of infant mortality must be understood before the most effective means could be used for its prevention, or the efficiency of the various agencies employed be measured While it is not necessary to consult a table of statistics to know that filthy, bacteria-teeming milk should not be used for infants, and while no statistics are necessary for the prevention of mortality from intestinal diseases in infants, yet our knowledge of the prevalence of these diseases has resulted from thorough registration of births and deaths. If the American Association for the Study and Prevention of Infant Mortality is to lead in the saving of infant life, it must have vital records by which its success can be measured, and it is therefore, one of the paramount duties of the organization to support all efforts for better vital statistic legislation What is needed is a series of accurate figures regarding infant mortality for cities, rural districts, states, and the nation as a whole They should be reliable, up to date, and presented in such form as to be comparable among themselves and with those of foreign countries. A thorough analysis of the returns should be made with regard to the cause of death, nativity, occupation of parents, sanitary condition of dwellings etc The first step is to secure complete and comparable data for the entire infant mortality, adding other details later Accurate statistics regarding infant mortality require the registration of both births and deaths, since infantile mortality is the ratio of the number of deaths of infants under one year of age to 1,000 children born alive, and not to the estimated population of that age. True infantile mortality can not be computed from the registration of deaths alone unless the birth rate is also known. Consequently, under existing conditions, it is impossible to present reliable statistics of infantile mortality for the United States, for any single state, or even for a single large city in the entire United States The present registration area includes only 55 3 per cent of the total population, as many states, including practically the entire South, make no record of deaths of their citizens, while even those states that have fairly good death registrations, grossly neglect birth registration. As an illustration of the importance of birth registration, the committee report quotes from the graphic examples cited by Dr. J. N Hurty, in his chairman's address before the Section on Preventive Medicine and Public Health.[1]

The committee discusses the duties of physicians and midwives in registering births, holding that they are not charged with the enforcement of the registration laws, but that it is their duty to obey these laws and that if they do not obey them, it is the duty of the registration officials to compel them to obey, under penalty of the law. Not even in New York City are the birth records complete, according to the local department of health, "there being still many that are not recorded by reason of the neglect of medical attendants and midwives." Regarding other cities, the report continues: 'It is a little difficult to decide in which of these great and prosperous cities of the United States—Baltimore, Chicago or New Orleans—the registration of births is most utterly worthless, but it is certain that it would not be possible to find their equals for worthlessness in any other country where vital records are maintained."

The remedy proposed by the committee is the enactment of adequate laws for the complete registration of births and deaths and the thorough enforcement of these laws After discussing the model law endorsed by the American Medical Association, the American Public Health Association, the Bureau of the Census and other bodies, the experiences of Pennsylvania, Ohio, and Missouri under this law are reviewed. At present, while the registration area for deaths is being rapidly extended, the registration of births is confined to a very few states and even these have only an approximate registration of 90 per cent. The New England states, Michigan, and the District of Columbia have fairly satisfactory birth registration laws, but Pennsylvania is to day the only state in which a determined effort has been made to secure complete registration of all births. In the great majority of states the law (where one exists) is practically a dead letter with the result that birth statistics and figures for infant mortality are both practically worthless.

The committee utters a warning against needless tampering with vital statistics laws or forms of registration and urges that no change be made in the model law or in the blank certificates, during the next ten years. Much of the imperfection of what vital statistics we have is due to the absence of a uniform blank for the initial data. This defect has been remedied by the adoption of standard certificates and any alteration should be discouraged until the defects assume sufficient importance so that the next general revision can include them, and all of the registration states can adopt them at the same time. In the words of the report: "We want no more tinkering with the forms in use until the time arrives for a general change." The vital statistics registration laws of England are reviewed and conditions there compared with those in this country. In the opinion of the committee, "It is unfortunate that the question of compensation to physicians and midwives should be urged by the medical profession in connection with the legislation for the registration or notification of vital statistics, because it at once places the profession in the position of asking a favor for interested motives, and may be denounced as 'medical graft' by many members of state legislatures It retards the cause of registration, has no good effect whatever on the completeness of the returns, and interferes with the thorough enforcement of the law." The committee also emphasizes the necessity for greater precision in terminology and for the adoption of a uniform nomenclature.

The conclusions of the committee were embodied in a preamble and resolution, which were unanimously adopted by the Association:

> Whereas, The registration of all births and of all deaths is most essential for the study of infantile mortality and the prevention of the deaths of infants and children from avoidable causes; therefore, be it
>
> *Resolved*, That the American Association for the Study and Prevention of Infant Mortality cordially approves of the model law for the registration of births and deaths, as recommended by the American Medical Association, the American Public Health Association, and the United States Bureau of the Census, and urges the thorough enforcement of such laws by the officials charged with the responsibility of their execution, with prosecution of physicians and midwives who neglect their duties to their clients and to the public health by failing or neglecting to register births as required by law.

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[1] Hurty, J. N: The Bookkeeping of Humanity, The Journal A M A, Oct 1, 1910, p 1157.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR JOHN H BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course]

Fourth Month—Fourth Weekly Meeting

INJURIES OF THE SPINE

Fractures, Fracture-Dislocations and Simple Dislocations of the Spine

Classification—Bryant and Buck: Am. Practice of Surgery, vi.

1. Isolated Fractures of Spinous and Transverse Processes, and Laminæ: Frequency, location, diagnosis.
2. Fracture of Atlas and Axis: Pathology, symptoms, diagnosis.
3. Bilateral Isolated Dislocations: Location, pathology, diagnosis.
4. Unilateral Dislocations: Frequency, location, pathology, symptoms.
5. Isolated Fractures of Vertebræ: Pathology, diagnosis.
6. Complete Fracture-Dislocations: Pathology, symptoms.

Symptoms of Fractures of the Spine in General: Crepitus, deformity, unconsciousness, paralysis, anesthesia, pain, priapism, delirium, cystitis, bedsores, sphincters. Regional diagnosis, symptoms of injury to cord in cervical, dorsal and lumbar regions

Treatment of Fractures of the Spine in General: Expectant treatment. Reduction and fixation of bony points. Primary laminectomy. Secondary laminectomy. Indications for each; technic of laminectomy.

Monthly Meeting

Surgery of the Spine

Diagnosis and Treatment of Fracture-Dislocation of the Spine.
Early Diagnosis and Treatment of Tuberculosis of the Spine.
Etiology and Diagnosis of Scoliosis.

State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, December 6-9. Sec., Dr. Charles L. Tisdale, 929 Butler Bldg., San Francisco.

DELAWARE: Regular, Dover, December 13-15; Homeopathic, Wilmington, December 13-15. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.

KENTUCKY: Louisville, December 15-17. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: 1211 Cathedral St., Baltimore, December 13-16. Sec., Dr. J. McPherson Scott, Hagerstown.

OHIO: Cincinnati, December 6-8. Sec., Dr. George H. Matson, State House, Columbus.

PENNSYLVANIA: Regular and Homeopathic, Philadelphia, December 6-9; Eclectic, Harrisburg, December 6-9. Secretary of the Medical Council, Dr. Nathan C. Schaeffer, Harrisburg.

VIRGINIA: Lynchburg, Dec. 20-23. Sec., Dr. R. S. Martin, Stuart.

Reappointed on Vermont Board

Dr. W. Scott Nay, Underhill, and Dr. F. H. Godfrey, Chelsea, have been reappointed by Governor Mead as members of the Vermont State Board of Medical Registration for a term of six years. Dr. Nay is the secretary.

Rhode Island October Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, October 6-7, 1910. The number of subjects examined in was 11; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 12, of whom 9 passed and 3 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Yale Medical School	(1908) 89.1; (1909)	90.7
Johns Hopkins University	(1908)	89.9
College of Phys. and Surg., Baltimore	(1909) 83; (1910)	80
Harvard Medical School	(1902) 81.2; (1909)	87.4
Tufts College Medical School	(1910)	86.2
Jefferson Medical College	(1910)	86.6

FAILED

College	Year Grad.	Per Cent.
Baltimore Medical College	(1909)	72.2
University of Maryland	(1910)	78
University of Vermont	(1910)	69.5

Wyoming October Report

Dr. J. B. Tyrrell, Acting Secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, October 26-28, 1910. The number of subjects examined in was ten; total number of questions asked, 100; percentage required to pass, 75. Only one candidate, a graduate of the University of Louisville, 1910, was examined and he passed with a grade of 83 per cent. The following questions were asked:

PRACTICE OF MEDICINE

1. Define typhoid fever, rheumatism, appendicitis and cretinism. 2. Name the principal infantile contagious diseases and outline your treatment for one disease. 3. Mention diet for child 1½ years old as you would to mother or nurse that you were instructing. 4. What are the following skin diseases: eczema, prurigo, lentigo, herpes and urticaria? 5. Mention treatment for psoriasis, erysipelas and ringworm. 6. What are mania, melancholia and dementia? 7. Describe epilepsy and give treatment. 8. Give symptoms and treatment of bronchopneumonia. 9. Give diagnosis and treatment of gastric dyspepsia. 10. What is chlorosis? Give treatment.

ANATOMY

1. Give a careful description of the duodenum, stating length, caliber and openings into it. 2. If the femoral artery were obstructed at the apex of Scarpa's triangle, through what channels would the blood flow to reach the tibial arteries? 3. Describe the structure of the knee joint. 4. Name the twelve pairs of cranial nerves. 5. Describe a hair follicle. 6. Give the course and relations of the ureters in the male; also female. 7. Name the five muscles of the back of the leg. 8. What tissues of the abdominal wall are divided in the operation for appendicitis at (a) McBurney's point, (b) over the rectus muscle? 9. Describe the course and distribution of the nerves of the palm of the hand. 10. What is connective tissue and where is it found?

PHYSIOLOGY

1. Give the physiology of the ureter. 2. Describe the nervous mechanism of muscular contraction. 3. Describe the physiologic properties of bile. 4. Describe the physiologic differences between lymph and serum. 5. What is metabolism? How many kinds and what are the differences? 6. What is food? Classify and give functions. 7. Describe briefly nervous control of heart. 8. What are the principal physiologic functions of the skin? 9. Describe the physiologic function of the testes. 10. Differentiate between serous mucus and synovial membranes. Tell where each is found.

PATHOLOGY AND BACTERIOLOGY

1. Define anemia, hyperemia, leukemia, leukopenia. 2. Name the intestinal lesions of typhoid fever and give pathology of each. 3. Differentiate between carcinoma and sarcoma and give the diagnostic pathology of each. 4. Describe method of making the Widal reaction. 5. How do bacteria multiply? 6. Name the principal characteristics that would be present in a suspected culture if it contained typhoid bacilli. 7. What is tuberculin? 8. What is the difference between an antitoxic serum and an anti-infectious serum? 9. Give pathology of scorbutus. 10. Give pathology of catarrhal appendicitis.

CHEMISTRY AND TOXICOLOGY

1. What is sp. gr.? What is a urinometer? Give specific directions for its use. 2. Describe physical and chemical changes of substances. Give examples of each. 3. Define chemical symbols. For what are the following symbols: (a) Au, (b) Ag, (c) Fe, (d) As, (e) K, (f) Sb, (g) Zn, (h) Hg? 4. Write formula for (a) common salt, (b) hydrogen dioxid (c) carbonic anhydrid, (e) calcium sulphate, (f) boric acid. 5. Write about iron; occurrence in nature atomic weight, properties, and name several of the preparations used in medicine. 6. Write about alcohol; its occurrence, formation, properties and name some of the preparations used in medicine. 7. How is iodoform made and what are its properties? 8. Give symptoms, fatal period, fatal dose and treatment of phosphorus poisoning. 9. Give symptoms, fatal period, fatal dose and treatment of acid poisoning. 10. Give test for albumin; for sugar in urine.

SURGERY

1. Name the luxations of the shoulder joints. What symptoms are common to all shoulder luxations? 2. Give etiology and symptoms of intestinal obstruction. 3. How are hernias clinically divided? Give palliative treatment of reducible hernia. 4. How are amputations classified? What general considerations are imperative to observe to insure successful amputation? 5. What are the general indications in the treatment of all wounds? 6. Describe the postoperative treatment of a case of gangrenous perforative appendicitis. 7. What are the general considerations as to the treatment of gun-shot wounds? 8. Describe case of cellulitis of hand and give treatment. 9. What is the cause of varicose veins? How should you treat them? 10. Differentiate between location of foreign body in trachea, larynx and bronchus.

MATERIA MEDICA AND THERAPEUTICS

1. Give antidotes for poisoning by belladonna, corrosive sublimate, carbolic acid. 2. What are the physiologic actions and therapeutic uses of arsenic? 3. Give physiologic action of strychnin. In poisonous doses, how does death ensue? 4. What are expectorants? How classified? Differentiate between the classifications. 5. Name the principal purposes for which diuretics are used. 6. What is ergotism? Give physiologic effects and therapeutic uses of ergot. 7. Name two principal counter-irritants. For what purposes are counter-irritants used and on what rests the basis for their employment? 8. Write briefly concerning the methods of giving enteroclysis. What are the principal medicinal substances used and for what diseased conditions is enteroclysis indicated? 9. Give the physiologic actions of ipecac and its therapeutic uses. 10. What are the principal causes for failure in the use of bacterial therapy?

GYNECOLOGY

1. What is a caruncle of the urethra? Treatment? 2. Why is gonorrhea relatively a more grave disease in the female than in the male? 3. Is ventrofixation of the uterus ever justifiable? How is the operation performed? 4. Define plastic operations as applied to gynecology. 5. When would you use the curette? Give steps of the operation in detail. 6. Give physical signs of cancer of the uterus in the early stage. What laboratory aids to diagnosis, if any, would you resort to in confirming your physical signs? 7. Diagnosis, prognosis and treatment of uterine fibroids. 8. Give in detail the method to be used in making an examination of the pelvis. 9. State size, weight, measurements and location of normal virgin uterus. 10. Write about the menopause, and give significance of that period of a woman's life.

PHYSICAL DIAGNOSIS

1. Make drawing of the anterior osseous chest wall; show outline of the heart and thoracic aorta beneath. Indicate points covering the mitral, tricuspid, aortic and pulmonary valves. 2. State the significance of prolonged expiration. Auscultation in such a case would probably disclose what adventitious sounds? 3. Why are the apices of the lungs usually first affected in pulmonary tuberculosis? 4. Define cyanosis and give the various causes. 5. Define tachycardia; give significance. 6. What are hemic murmurs as applied to the heart, and what is the cause? 7. Name and describe the essentially different sounds given by the thorax on percussion. 8. (a) What is the cause of the second or diastolic sound of the heart? (b) What is the Corrigan pulse? Give significance. (c) Define pulsus paradoxus; intermittent pulse; dicrotic pulse; digeminal and trigeminal pulse. 9. Differentiate ascites and tympanites. 10. Give physical signs and causes of general anasarca.

OBSTETRICS

1. Describe briefly the female pelvis. 2. Give the successive changes that take place in the ovum after fecundation and during its passage to the uterus. 3. What is the umbilical cord and what are its uses? 4. Describe the fetal heart sounds, give their rate and state when and where they are best heard. 5. Write about morning sickness as to when it occurs, how long it continues, cause and treatment. 6. What is eclampsia? Give treatment. 7. Name several causes of abortion. 8. Give treatment for inevitable abortion. 9. Give list of articles needed by the physician during labor. 10. What are the dangers of a breech presentation? Why? Give treatment.

Book Notices

Edema. A Study of the Physiology and the Pathology of Water Absorption by the Living Organism. By Martin H. Fischer, Professor of Pathology in the Oakland School of Medicine, Oakland, Cal. Cloth. Price, $2 net. Pp. 209, with illustrations. New York: John Wiley & Sons., 1910.

This monograph, which was awarded the 1909 Nathan Lewis Hatfield prize of the College of Physicians of Philadelphia, is a consideration of the subject of edema and certain related topics, on the basis of the author's abundant and original investigations in certain principles of colloid chemistry. It is a well-known fact that certain colloids possess a great affinity for water, and take it up in large amounts until a condition of saturation is reached. The amount of water which will be taken up varies with the nature of the colloid, and also with the composition of the aqueous solution with which it is in contact; the latter is a very important consideration, as exhibited by such a phenomenon as the great swelling of fibrin when in slightly acidulated solutions. After a study of the influence of various substances dissolved in water on the amount of fluid which various colloids and also organized tissues will take up from such solutions, Fischer applies his results to the problem of edema. He concludes that the most important factor in the excessive accumulation of fluid in living and dead tissues is the development within these tissues of excessive quantities of acids, most commonly because of defective oxidation, the acid causing the colloids to have a much greater affinity for water than is normal. This hypothesis has the virtue of much originality and in many ways it is attractive—certainly it has not been adequately considered in the past, a defect which Fischer more than corrects. With great enthusiasm this principle is made to cover pretty much everything known concerning the presence of fluids in the tissues and secretions. Possibly Fischer is correct in this, but no physiologist or pathologist can read the work without finding many places where he meets with obstacles in applying the principle to the facts with which he is familiar. Undoubtedly the author also knows of these obstacles, and perhaps he can overcome them satisfactorily, but the critical reader would find the book much more convincing if he had done so while presenting his doctrine. There is no lack of originality and inspiration in this book, as exhibited especially in the discussion of the author's experiments on hemolysis and urinary secretion, and undoubtedly the monograph is well worthy of the prize it was awarded. Nevertheless, a more analytic discussion, and a more critical attitude toward his own arguments would, in our opinion, have been more creditable to the brilliant and enthusiastic investigator.

Die spinale Kinderlähmung. Eine klinische und epidemiologische Studie Von Dr. Eduard Müller, Direktor der Medizinischen Universitäts-Poliklinik in Marburg, mit Unterstützung von Dr. med. M Windmüller, Assistenzärztin der Poliklinik. Paper. Price, 6 marks Pp. 170, with 21 illustrations Berlin: J. Springer, 1910.

This rather extensive monograph gives a complete description of the epidemiology, etiology, pathology and clinical features of acute anterior poliomyelitis as studied in an epidemic in the vicinity of Marburg. As a review of the entire subject it serves its purpose excellently, but as an original contribution it adds little to the advancement of this subject. By means of accurate reporting of all cases it was evident that the disease usually spreads by direct contact, but that in some instances it was carried by a third person, and in exceptional cases doubtful evidence seems to implicate the soil. The incubation period varied from five to ten days. The description of the clinical features of the disease is excellent. Depending on the epidemic the respiratory and gastro-intestinal types may be differentiated. The three cardinal symptoms of onset, the hyperesthesia, the hyperhydrosis and the leukopenia, form a triad that is practically never absent. Another symptom to which he calls special attention is the wakefulness at night and the soper during the day. Müller emphasizes particularly the so-called abortive cases, which he thinks are not very uncommon. The onset is just as in a typical case, but paralyses fail to develop. The reflexes are usually lost in one extremity or more. The importance of these cases lies in the fact that their true nature may not be recognized and that they may become the means of spreading the disease.

The Taxonomic Value of the Microscopic Structure of the Stigmal Plates in the Tick Genus Dermacentor. By C. Wardell Stiles. Hyg. Lab. Bull. 62, August, 1910. Paper. Pp. 72, with 134 illustrations. Washington: Government Printing Office, 1910.

Recent discoveries showing the importance of ticks as carriers of disease, not only to animals but also to man, have rendered careful study of the structure and habits of these pests of great significance for preventive medicine. In this bulletin Stiles considers the North American species, and finds that the microscopic structure of the stigmal plates is a taxonomic character of considerable importance, upon the basis of which the *Dermacentor* of this country can be divided into four groups. The Montana tick, which has been shown especially by the extensive studies of the late Dr. Ricketts, to be a means of transmission of Rocky Mountain spotted fever, is now found to be a distinct and new species (*Dermacentor andersoni*, according to Stiles), although it has been referred to in the literature of this disease as *D. occidentalis*, largely on the authority of Stiles himself. The tick which Salmon and Stiles considered identical with *D. reticulatus* of Europe is shown to represent a new species, *D. salmoni*.

In this connection some recent correspondence in The Journal (Oct. 29, 1910, p. 1574, and Nov. 26, 1910, p. 1910) from N. Banks and Dr. Stiles will be of interest.

Dust and Its Dangers. By T. Mitchell Prudden, M.D., Author of "The Story of the Bacteria," etc. Second Edition. Cloth. Price, 75 cents. Pp. 113, with 6 illustrations. New York: G. P. Putnam's Sons, 1910.

This little volume of slightly over a hundred pages in its second edition still more forcibly emphasizes the important relation of dust to the transmission of bacterial diseases, and particularly tuberculosis. In its revised form it contains the latest knowledge concerning the bearing of dust on health, inculcates the duty of preventing or getting rid of dust in private homes, public places and the streets of our cities, and outlines methods of accomplishing this end. It also protests forcibly against the dangers of the spitting habit which is the prolific source, through dust, of the spread of tuberculosis. It is of value in the education of the laity in sanitary prophylaxis.

Handbook of Regional Anatomy. By Francis C. Ford, M.D., Professor of Anatomy, Head of Department of Anatomy and Senior Demonstrator of Anatomy in the Hahnemann Medical College and Hospital, Chicago. Cloth. Price, $1.50 net. Pp. 193. Chicago: Francis C. Ford, 1910.

This book is an attempt to supply to students or others a guide in anatomy to fill a place between the purely descriptive text of the larger anatomies and the applied anatomy of the surgeon or the diagnostician, and would perhaps be of assistance to the student in the dissecting-room. The descriptive portion, however, is so meager that it really amounts to a mere enumeration of the anatomic structures to be found in each region of the body, from periphery centralward. Mechanically, the book is not up to the standard of modern book-making.

Obstetric Nursing, for Nurses and Students. By Henry E. Tuley, M.D., Professor of Obstetrics, Medical Department, University of Louisville. Cloth. Price, $1.50. Pp. 246, with 72 illustrations. Louisville: John P. Morton & Co., 1910.

Revision makes this book more than ever a practical and serviceable guide for the obstetric nurse. Some of the pictures seem to be unnecessary; for example, that showing the use of the stethoscope in listening for the fetal heartbeat. The misspelling in Figure 7 is amusing; evidently the engraver, who did not know medical terms, did the best he could in reproducing the copy for the lettering. An index and a glossary aid in making the book valuable.

History of Chemistry. By Edward Thorpe, F.R.S., Author of "Essays in Historical Chemistry," etc. Two Volumes. Vol. II, from 1850 to 1910. Cloth. Price, 75 cents. Pp. 202, with 180 illustrations. New York: G. P. Putnam's Sons, 1910.

This is a continuation of Volume I of this work and discusses the more important discoveries in chemistry and the evolution of that science during the last half century. Considerable space is devoted to the most recent advances, especially in theoretical chemistry. The book contains several portraits of the more noted chemists of this period.

Medicolegal

Against Ordering X-Ray Examination—Admissibility of X-Ray Photographs in Evidence—Objective and Subjective Symptoms and Hypothetical Questions

The Supreme Court of Missouri, Division No 1, says, in the personal injury case of Dean vs Wabash Railroad Co (129 S W R 953), that the defendant company filed a motion asking the trial court to order that the plaintiff submit himself to an examination by a disinterested surgeon whom the court should select, and also that he submit to have *x* ray photographs made of his alleged injured parts The motion was sustained to the extent of the surgical examination, but overruled as to requiring the plaintiff to submit to the *x* ray photograph process, because the court was advised that sometimes the subjecting of a person to that process resulted in danger to him There was no error in that matter

Two *x* ray photographs offered in evidence by the plaintiff were taken by a physician who testified that he owned an *x* ray machine and was familiar with its use and operation, that he examined the plaintiff with it, taking observations of both hips After taking the negatives with his *x* ray machine, he took them to a photographer and had the pictures developed, the operation of developing and printing the pictures was done by the photographer under the supervision of the witness who understood the art, and that the pictures were correct photographs The witness further explained that it was the bone that caused the shadows in an *x* ray photograph, and pointed out certain parts of one of the pictures which showed the enlargement of the upper part of the right thigh bone, testifying that that indicated a fracture near the base of the great trochanter of the femur

It was not error to admit those photographs in evidence Even on the theory of the defendant that such a picture is, in itself, not evidence, but only serves as a memorandum to assist the expert witness in his explanation, the pictures were properly admitted in evidence, and were used to illustrate the scientific explanation of the witness The art of making photographs of the bones of a living man by use of the *x* ray is yet still more in the keeping of science than the art of common photography, but that fact only requires more care in laying the foundation for the introduction of such photographs, it does not exclude them from evidence

The defendant called some expert witnesses and propounded to them hypothetical questions based on certain objective symptoms which some of the witnesses testified they had found on physical examination of the plaintiff and on certain facts to which witnesses testified, and asked the expert witnesses their opinions as to the injury the plaintiff had received based on those symptoms and facts On cross examination the plaintiff's attorney supplemented those hypothetical questions by asking the witnesses to take into consideration, also, certain subjective symptoms to which the plaintiff had testified, and then give their opinions based on the whole case, that is, the symptoms and facts contained in the defendant's questions, together with those supplemented by the plaintiff's questions The defendant objected to the questions on the ground that subjective symptoms should not be taken into account There was no error in overruling the objection

Objective symptoms are those which the surgeon discovers from a physical examination of his patient, subjective symptoms are those he learns from what his patient tells him When a surgeon has no cause to suspect untruth or delusion, he takes what his patient says and weighs the subjective symptoms with those he has discovered and on them he bases his diagnosis and proceeds to his prescription

Why should not a surgeon when he is called as an expert witness, and asked his opinion on a hypothetical case, take into account the same character of facts that he would when called to attend a suffering patient? Objective symptoms are no more realities than subjective symptoms if both are true Objective symptoms depend for their proof as much on the candor and capability of the witness testifying in regard to them as do subjective symptoms, a witness testifying to an objective symptom is as liable to be mistaken as one testifying to a subjective symptom and perhaps more so An opinion given in answer to a hypothetical question is based on an assumption that the facts supposed are true, but at last it is for the jury to find from the evidence whether the supposed facts are proved, if the jury find that the facts are not proved they will disregard the opinion based on them

If a physician is testifying as to the condition of a patient whom he has examined, then it is proper to draw a distinction between the objective and the subjective symptoms, but when he is asked for an opinion on a hypothetical case, he must assume the truth of the one as well as that of the other

Cancer Hospital May be a Nuisance in Residence Neighborhood

The Supreme Court of Kansas approves the injunction which was granted in the case of Stotler vs Rochelle (109 Pac R 788)

The suit was brought to enjoin the establishment, in a residence neighborhood, in a building formerly used as a dwelling house, of a hospital for the treatment of patients afflicted with cancer The home of the plaintiff was 78 feet from the main building which it was proposed to use as a hospital The two houses faced in the same direction, and each had a number of windows looking toward the other Two other residences were situated about 90 feet from the hospital building, and three others at a distance of about 150 feet

Witnesses for the plaintiff who were familiar with real estate values testified that in their judgment the establishment of the hospital would cause a material depreciation in the rental and market value of the surrounding property. Several physicians expressed the opinion that there would be some danger of the communication of the disease through transmission by means of insects, and perhaps in other ways There was also evidence that offensive odors resulting from the disease itself and from disinfectants used on account of it might reach the occupants of neighboring dwellings On the other hand, there was testimony on behalf of the defendants that none of the anticipated evils had resulted from a cancer hospital formerly maintained by them under somewhat similar conditions, that under proper management there need be no offensive odors about such a place, and that cancer is not contagious or infectious

Perhaps the court may take notice of the prevailing view in the medical profession on the last proposition From the current literature of the subject it appears that while it has not been proved to the satisfaction of the profession generally that cancer can be communicated from one individual to another except by the process of grafting or transplanting cancerous tissue, competent investigators are not lacking who believe that it is of parasitic origin and in some degree infectious That theory is presented and argued at length in an address published in the *Lancet*, January 11, 1908, to which is appended a bibliographic note Results of experiments tending to support the theory are recorded in the issues of June 5, 1909, and April 9, 1910 An article in the same publication (Dec 4, 1909, pp 1709 1711) describes observations made in Paris covering a period of two years and a half which lend color to the popular belief in the existence of "cancer houses," that is, houses the occupants of which are peculiarly subject to cancer In the present state of the accurate knowledge on the subject, it is quite within bounds to say that, whether or not there is actual danger of the transmission of the disease under the conditions stated, the fear of it is not entirely unreasonable

It is of course not necessary that the use to which property is put shall be unlawful in itself in order to constitute it a nuisance in the eye of the law Whether in a given case the obligation so to use one's own property as not to injure another's has been or is about to be so far transgressed as to justify the interference of a court is a question to be determined as a matter of reason, fairness, and justice under all circumstances. The injury need not extend beyond annoyance, if in view of all the facts, it is unreasonable. For instance, offensive odors, although not injurious to health have often been held to constitute sufficient ground for injunction.

The question was not whether the establishment of the hospital would place the occupants of the adjacent dwellings in actual danger of infection, but whether they would have reasonable ground to fear such a result and whether, in view of the general dread inspired by the disease, the reasonable enjoyment of their property would not be materially interfered with by the bringing together of a considerable number of cancer patients in this place. However carefully the hospital might be conducted, and however worthy the institution might be, its mere presence which would necessarily be manifested in various ways would make the neighborhood less desirable for residence purposes not to the oversensitive alone but to persons of normal sensibilities. The court concludes that on these considerations the injunction asked for was rightfully granted. The establishment of a cancer hospital in a residence neighborhood in near proximity to dwellings may be enjoined at the instance of one owning and occupying adjacent property.

Physicians Excepted from Missouri Medical Practice Acts

The St. Louis Court of Appeals says, in State vs. Hellscher (129 S. W. R. 1035) that the act of 1901, in so many words, was limited to those who should thereafter practice who had not theretofore registered. Those who had theretofore been duly registered were excluded from the law. In other words, this statute as originally enacted in 1901, did not create a general offense on the part of all who should thereafter practice but created an offense limited to a particular class of persons, that is, those who had not been theretofore registered, who should thereafter practice without first registering with the State Board of Health. The law related to acts committed by those particular persons only, to those thereafter practicing medicine or surgery who had not theretofore been licensed as provided by law.

This court does not think that the amendment made by the act of 1907 in any manner changed this phase of the law, nor made it any the less part of the enacting clause, notwithstanding the fact that what was before in the body of the enacting section or clause now appears as attached to that clause by way of a proviso. Changing the position of the words did not change the law. Looking at what the general assembly was attempting to do and considering the matter and phraseology of the amendment of 1907, it is obvious that this arrangement was more for the purpose of avoiding awkwardness of expression, than with any intent of change in the object of the law itself, and the mere fact that what had before been in another place in the enacting section (namely, the phrase "except physicians now registered") is transposed, and appears under the designation of a proviso, has not had the effect of eliminating the words from the enacting clause itself.

It is still the intention of the act regulating the practice of medicine and surgery that its operation shall apply only to those who had not been licensed or registered as physicians or surgeons prior to March 12, 1901. Obviously the legislature by the amendment of 1907, did not intend to invalidate the registration and licenses of physicians and surgeons who had been regularly licensed and registered under the laws prior to March 12, 1901, the date of the approval of the act of 1901, any more than it had by the act of March 12, 1901, made its provisions applicable to those who had registered as physicians or surgeons prior to that date.

Another reason for the insertion of this limitation at the end of the section, instead of leaving the exception as in the original section, may have been that, as new prohibitions were inserted by the amendment, the lawmakers did not intend to leave any doubt that those new requirements were not to be made of the old physicians.

Society Proceedings

COMING MEETINGS

Southern Surg. and Gyn. Assn., Nashville, Dec. 13-15.
Western Surg. and Gyn. Assn., Chicago, Dec. 19-20.

SOUTHERN MEDICAL ASSOCIATION

Fourth Annual Meeting, held at Nashville, Nov. 8-10, 1910

(Continued from page 1920)

Inguinal Hernia

Dr. John Smyth, New Orleans, reported three cases. The sac in the first case was probably a variety of the pantaloon sac. This kind of sac may account for some of the failures to cure hernia by operation. The condition in the second case was evidently the result of a failure securely to close the neck of the sac in a previous operation. The condition in the third case was the result of an effort at reduction of the hernia, in which the position of the testis was lost sight of or ignored. The truss applied at that time caused sufficient traumatism to produce adhesions which imprisoned the testicle in the upward reflection of the sac, and the enterocele, or hernia proper, recurred in the lower peritoneal pouch, possibly another case of pantaloon sac.

DISCUSSION

Dr. Duncan Eve, Nashville: The success of all operations for the relief of hernia depends on obliteration or removal of the sac, and the transplantation of the cord to the new bed or canal.

Dr. C. W. Allen, New Orleans: In a case of double inguinal hernia I completed the operation on the side where the sac was. I had transfixed the sac and proceeded to the other side; when I got to the sac there was a gush of blood. The blood came from the abdominal cavity. I knew I had not injured the deep epigastric artery on the other side, but something was wrong. I put the forceps on the side I was then operating on, went back, opened up the hernia on the other side and found that the ligature had slipped, and the hemorrhage was coming from the small vessel in the sac. We closed the sac and evacuated the blood in the cavity. That is the only time this has happened to me.

Dr. J. L. Crook, Jackson, Tenn.: The reason we do not operate more frequently for hernia is that we are perhaps negligent in pointing out to our patients the necessity of it. Men wear trusses for years when a simple operation with a very low mortality would make them practically perfect men physically.

Dr. Robert Caldwell, Nashville: It is not so much the removal of the sac *in toto* as it is the treatment of the exudate about the neck of the sac. Ochsner, of Chicago, was the first to advise simple treatment of the neck of the sac of a femoral hernia and he got results that were almost perfect. We are going to have recurrences whether we use the Bassini, the Ferguson, or the Macewen method, because we have to deal with different conditions. I do not see why we should transplant the cord instead of allowing it to stay in place, treating the neck of the sac properly, and supporting the internal ring, if necessary constricting that so as not to invite subsequent hernia. I do not see why in routine work we should still do the Bassini.

Dr. Willis C. Campbell, Memphis: In all cases at the New York Hospital for Ruptured and Crippled, a plaster spica is applied after the operation which immobilizes the parts absolutely and gives opportunity for quicker healing and leaves practically no dead spaces.

Dr. Charles A. Robertson, Nashville: Why are we not more frequently called on to operate on hernia? The reason for it lies in the fact that fitting trusses is largely in the hands of instrument dealers and druggists, who make false claims in regard to the permanent or curative value of the truss. It is a sad commentary on our profession that we have allowed these cases to get out of our hands and go primarily for treatment to men of this class, and I suggest that it is our duty to discourage patients from going to these men, and to urge on them the necessity of operation.

DR W D SUMPTER, Nashville The operation can be performed under local anesthesia with comparatively little pain If local anesthesia were resorted to more frequently more men would be operated on for the relief of this condition who fear a general anesthetic

DR PAUL DEWITT, Nashville There is no doubt that the operation for the radical cure of hernia can be performed just as completely under local anesthesia as under general anesthesia I have yet to find a patient who suffered any amount of pain during the operation

Operative Treatment of Fractures

DR C W ALLEN, New Orleans The view of operating on all fractures will never become universally adopted A more conservative middle ground seems the wiser, and to this group most conservative surgeons belong We learn from the study of the after condition of fractured limbs that a timely operation could have done much toward improving the functional usefulness of many of them A general anesthetic is demanded for the proper reduction of all fractures, except the simplest All fractures after reduction should be skiagraphed, and it is often found that what was thought to be a well reduced fracture, proves to be far from satisfactory In many cases reduction is possible, but cannot be maintained owing to the obliquity of the line of fracture When reduction is impossible operation should unhesitatingly be performed and one frequently finds on operating on such cases that the interposition of soft material would have made reduction impossible by any other than operative means The time for operation calls for some judgment In cases seen early, within the first twenty four hours, when there is not much injury to the soft parts, operation had best be done at once When there is extensive injury to the soft parts, or when several days have elapsed before first seeing the patient, delay should be advised until the local inflammation subsides, sometimes about the second week, when there will be less danger of infection I think far too many limbs are needlessly cut off With a little hard work and some ingenuity on the part of the surgeon many badly mangled limbs can be saved So long as the blood supply is sufficient to keep alive the peripheral parts there is a chance It is better that such patients spend six months in a hospital and walk out sound and able to make a living than to be discharged after three weeks with the loss of a limb, and spend the rest of their lives as hopeless cripples or helpless charges on the community

DISCUSSION

DR W P MCADORY, Birmingham A number of years ago I had a negro patient who was shot through the middle of the femur I kept the limb in extension for five weeks, at the end of which time I found that I had an ununited fracture I cut down on the seat of the fracture and found the bullet interposed between the ends of the bone I resected both ends of the bone, wired the fragments, and succeeded in giving this man a useful limb

DR H A ELKOURIE, Birmingham I would rather cut down on the bone and fix or wire the fragments together than trust to hypothesis and get bad results

DR A G PAYNE, Greenville, Miss In compound fractures it is best to operate, open up thoroughly, use phenol, tincture of iodin, peroxid of hydrogen, or bichlorid of mercury, but be sure the wound is thoroughly clean Any mechanical device you may see fit to use to hold the fragments in position will work if you are clean about it

DR MICHAEL HOKE, Atlanta As an orthopedic surgeon I am called on to correct many deformities the result of badly united fractures There are many things in the books on fractures that are absolutely wrong For instance, if the practitioner puts up a fractured elbow joint in the position of flexion and does not incorporate the shoulder, he cannot control the upper fragment, the shaft of the humerus Similarly, if he has a fracture of the forearm he cannot control the fragment unless he locks that up by putting it straight

DR JOHN SMITH, New Orleans I must differ with those who want to operate in every case I think that would be a mistake I have under treatment a young girl who sustained a fracture of the humerus about an inch and a half above the elbow joint, supracondyloid in which case the upper fragment goes backward and the lower fragment is tilted forward These fractures were put up in flexion, with a weight on the elbow joint, after the suggestion of Lovett and Stimson After repeated examinations with the Roentgen ray apposition was found very good, and after eleven days the splint was taken off, the arm massaged a little, and a light plaster splint reapplied The girl will not only have a good functional result but a good cosmetic result

DR ROBERT CALDWELL, Nashville I believe that operative treatment of compound fractures should be the rule and nonoperative treatment the exception Of course, much will depend on the character of the fracture If we have a transverse fracture, we know that if we reduce it, it is comparatively easy to maintain it in position and we secure good results by non operative treatment, but if we have an oblique fracture, or a spiral fracture, although we have secured reduction, it is difficult to maintain it, consequently knowing the comparative rarity of a true transverse fracture, we would say that operative treatment should be the rule and non operative treatment the exception

DR DUNCAN EVE, Nashville Until recently we were very well satisfied with firm union We did not think much about the question of permanent results, but since our ideal has been raised by the Roentgen ray we not only insist on a good functional result, but also on a cosmetic one While I am not opposed to the operative plan of treatment of fractures, I am not modern enough yet to suggest that all closed fractures should be treated by the open method In compound fractures this method is all right because you have an open wound Also for those fractures which cannot be reduced, or which when reduced, will not remain in coaptation, but the time has not arrived when surgeons will generally accept the open method as an every day plan for the treatment of closed fractures

DR E DENEGRE MARTIN, New Orleans The first and most important thing is to know the character of the fracture, and above all the anatomic structures involved If you have a simple transverse fracture, you are a poor surgeon if you cannot reduce it and hold it in position If you have an oblique fracture due to torsion, you are dealing with contraction of certain muscles and you will have trouble in holding the fragments in apposition and you must overcome the action of the muscles if you would get good results

End Results of Surgical Operations on Nervous Women

DR S T RUCKER, Memphis Nervous women, as a rule, do not make good subjects for surgical operations An operation should not be undertaken unless there is a definite, unmistakable pathologic lesion, and it is the chief cause of the nervous symptoms A correct estimate of the end results of surgical procedures cannot be made unless the surgeon keeps in touch with his patients for months after they return home. In clearing up diagnoses in obscure conditions, every surgeon should seek the aid of a competent internist, neurologist, and pathologist When a patient presents herself, she seeks relief from suffering She is not especially anxious to be cut, but to be cured, and the surgeon should always ask himself the question If this were my wife, or my daughter, would I advise an operation?

DISCUSSION

DR A A HEROLD, Shreveport I recall distinctly the case of a woman who was operated on four times, first, for a retro-displacement of the uterus, second, for the removal of one or both ovaries, third, for the removal of the appendix, fourth, for the removal of a kidney Finally, she was transferred to the neurologic department, and what became of her after that I do not know

DR GEORGE R LIVERMORE, Memphis A man came to me for diagnosis and possible operation for kidney stone He gave obscure nervous symptoms, with violent pain in the right side The diagnosis of appendicitis had been previously made by another physician He was operated on and his appendix removed, but the pain was just as severe as before Then a diagnosis of gall stones was made by a surgeon in Cincinnati, who operated for that condition. No gall-stones were found. The gall bladder was drained, and the pain was just as severe after this operation as before. I thought his condition was more hysterical or neurasthenic than otherwise. Urinalysis was negative. He had never passed any calculi. Roentgen-ray examination showed no stone in the kidney, nor shadow anywhere, and so I refused to operate, and advised him to consult a neurologist.

DR. J. A. CRISLER, Memphis: I recall the case of a physician who had all the evidences of neurasthenia, including genuine hysteria, and who had the notion that he had a bad gall bladder and a bad appendix. I refused to operate on him. He went to every surgeon in Memphis. He then went out of town to consult another surgeon, who removed his appendix and drained his gall bladder, and he has since been perfectly well. We might cite these cases one after another and prove, on the other hand, that surgery was indicated.

Surgical Treatment of Hepatic Cirrhosis

DR. ARTHUR A. HEROLD, Shreveport: I believe that all well marked cases of atrophic cirrhosis of the liver should be advised to submit to surgical procedure. I do not consider the results obtained, on the whole, brilliant, but I do not believe that a failure to benefit one of these cases by operation will injure the reputation of either the surgeon or of surgery.

Why Ligate the Sac in Hernia?

DR. H. A. ELKOURIE, Birmingham: I have done within the last six years twenty-two herniotomies without removing the sac. There has not been a single recurrence.

Coxa Vara

DR. WILLIS C. CAMPBELL, Memphis: The diagnosis is not difficult. As a rule no medicinal measures are indicated, but thyroid extract deserves a trial. In patients of moderate size a simple stilting abduction brace should be used until the bone is firm, when an osteotomy can be done below the lesser trochanter by any of the various methods, and the extremity held in abduction and internal rotation by a plaster spica, including the foot below and extending to the nipple or axilla above. I do not believe that a brace would be satisfactory in a fat subject such as my patient is, but when further reduced we may be able to use any desirable method. At present the patient is in a plaster spica extending to the nipple line, and the extremity held in as much abduction as possible. The condition has probably been present for one year, and at the expiration of two more years a corrective osteotomy can be done with excellent functional result if there is no further change visible by the Roentgen ray; otherwise we must wait until the process is stationary. In the meantime, I shall apply successive plaster spicas with forcible abduction and internal rotation, which may restore the angle sufficiently to give perfect function.

Purgatives with Pain in the Abdomen

DR. C. N. COWDEN, Nashville, Tenn.: There is no place for the administration of a purgative with pain in the abdomen unattended by a diarrhea.

The patient's danger lies not in the fact that the bowels do not move, but in the condition that produced the pain and obstruction, and the administration of purgatives of any kind under these circumstances is not only irrational, but is productive of the greatest harm to the patient. He does not get well because you force his bowels to move, but in spite of the effect of your drastic measure. Why not be rational in the treatment of these cases and meet the indications with remedies or measures that are indicated and not by the indiscriminate use of purgatives?

Human and Bovine Bacilli from Isolated Cases of Cervical Adenitis

DR. WILLIAM LITTERER, Nashville: Eleven consecutive cases of primary tuberculous cervical adenitis were studied, which resulted in the isolation of five cultures of *Bacillus tuberculosis* of the *typus humanus*, and six cultures of the *typus bovinus*. The classification of the types was made on the basis of four tests: First, the morphologic characters of the cultures; second, the dysgenetic or eugenetic characters of the cultures; third, the relative virulence toward rabbits, and, fourth, the reaction curve in 5 per cent. glycerin bouillon. This latter test serves admirably to distinguish between the two types, provided careful control tests be adhered to rigidly. I have found the differences in the growth of the two types, dysgenic and eugenic, on Dorset's egg medium to be very valuable in differentiating one type from the other. Rabbit virulence has probably been more uniformly satisfactory than any other of the tests in determining the differences between the two types of bacilli. In gathering up the clinical data of the eleven cases, I was unable to discern a single feature of distinction between those persons who harbor the human type of bacillus, and of those who were infected with the bovine type. The only striking difference observed was the result procured from the administration of tuberculin. In order that uniformly satisfactory results be obtained from the therapeutic administration of this agent, it is imperative that the nature of the type of infection be determined, so that a corresponding strain of tuberculin be employed.

The Gamete Carriers

DR. GRAHAM E. HENSON, Crescent City, Fla.: Until such a time as a campaign of enforced screening of all homes and public meeting places has been generally effected, it is imperative that in addition to the proper treatment of patients showing acute clinical manifestations of malaria, some means be devised to corral all chronic gamete carriers that either have frequent recurrences or possibly only after long periods of time, and that they be kept under treatment long enough to destroy all parasites they may be harboring.

Carbonic Acid Baths in the Treatment of Heart Diseases

DR. J. H. HONAN, Bad Nauheim, Germany: Carbonic acid baths have been used in cardiac diseases for over fifty years, and in all this time there has ever remained the question of their physiologic action. In all of my cases, with a pulse above normal, I have observed a slowing, and in but one case an increase. This was a very nervous man with a pulse of 60 and a subnormal temperature of 36.5 C., and blood-pressure of 140. In this patient I observed an increase of eight beats after an immersion of six minutes. In this action the baths resemble very much the digitalis group. If the high pressure is due to a poisonous irritation in the blood stream, the carbonic acid baths by their action of increased elimination, soon rid the blood of the toxic elements. In the blood tests which I have made there has in a large percentage been found an increase in the hemoglobin, and a better developed red blood corpuscle. The pulse is a good indicator to guide in the treatment and the duration of the baths. The results of my clinical studies convince me that carbonic acid baths in most cases reduce high blood pressure, raise low blood pressure, increase the pulse volume, increase elimination, increase pulse amplitude, increase heart energy, increase duration of temperature, reduce peripheral resistance, reduce dilatations, and relieve nervous irritability.

Infant Feeding

DR. MARGARET O. DAVIS, Nashville, brought out some points regarding the differences in human and cows' milk in infant feeding, the care of feeding utensils, etc. She emphasized the necessity of pure milk, and its preference to the use of drugs in some cases. The predisposition to disease of poorly fed children was touched on. She emphasized the need of certified milk in cities.

Cardiorenal Treatment

DR. J. B. GUTHRIE, New Orleans, spoke of the use of digitalis in heart diseases. He withholds a salty diet in cases of dropsy, which assists the patient in enduring the thirst, and makes easier work for the heart. Measure of the urine is the gauge of treatment, and rest, dry salt-free diet and purgation give as striking a change as we see with the addition of digitalis He recommends purgatives of strong salines or jalap in dropsy cases In acute dilatation he recommends venesection, as well as the use of opiates to insure rest He emphasizes the necessity of treating the heart muscle, even when the kidney or vessels are first affected, that is, to lighten the labor of the heart muscle by depleting measures, purgatives, diuretics if the kidney is sound rest in bed, when possible, by use of opiates if there is distress, and by the reduction of drinking fluids Digitalis may be given to prolong the rest period of the heart beat

Double Perforation in Typhoid Fever

Dr E M Folkes, Biloxi, Miss, reported two cases of perforation following typhoid fever One patient died eleven days after a successful operation for the closure of the perforation The diagnosis in this case was made early, and operation performed promptly

The names of the new officers elected were given in The Journal Nov 19, 1910, p 1819

TRI-STATE MEDICAL ASSOCIATION OF MISSISSIPPI, ARKANSAS AND TENNESSEE

Twenty Seventh Annual Meeting, held at Memphis, Tenn, Nov 15 17, 1910

The President, Dr J S Rawlins, Danceyville, Tenn, in the Chair

Officers Elected

The following officers were elected for the ensuing year President, Dr J W Barksdale, Winona, Mississippi, vice presidents, Dr John Darrington, Yazoo City, Miss, Dr Robert P Nall, Armorel, Ark, Dr Arthur G Hudson, Rein, Tenn, secretary, Dr Eugene Rosamond, Memphis (reelected), treasurer, Dr J A Vaughan, Memphis (reelected)

Memphis was selected as the place for holding the meeting in 1911

Injection Treatment of Infected Joints

Dr M G Thompson, Hot Springs, Ark A boy, 19 years of age, had had gonorrheal arthritis which resulted in ankylosis of the right knee of eleven months' duration Under local anesthesia a needle was thrust deep enough to enter the capsule No synovial fluid escaped, but an injection of liquor formaldehydi in glycerin was made The next day the knee was more painful The patient had some fever and was very much depressed mentally, but he was assured that in a day or two he would have a general anesthetic and the breaking up of the adhesions On the fourth day this was done, and after breaking up the adhesions and flexing the knee, the needle was thrust into it at the same point and at the same depth as at first, and the synovial fluid ran out freely The injection of the formaldehyd glycerin fluid was then made and the knee flexed several times This flexion relieved the pain very much In two weeks he could walk, and the knee had returned almost to its normal size

DISCUSSION

Dr Bernard Asman, Hot Springs, Ark I have treated twelve or fifteen cases by this method and satisfactory results have been obtained in all In some the relief was more prompt and more complete than in others but in none were there any untoward results observed An important point in regard to the formaldehyd in glycerin solution is that it must always be made up at least twenty four to forty eight hours before the time of using

Dr John L Jelks, Memphis Ten years ago I maintained that infections by the staphylococcus and by the tubercle bacillus could be controlled with formaldehyd solution I also pointed out that formaldehyd solution would destroy the gonococcic infection of the urethra within two weeks

The After-Care of Anterior Poliomyelitis

Dr Willis C Campbell Memphis, reported four cases of the disease, and in recapitulation said: The spine should be immobilized during the period of muscular excitability, as we would any acutely inflamed joint with muscular spasm The anatomic relation of the joint surfaces should be maintained to prevent deformities from muscular contraction Deformities, when present, should be corrected by surgical procedures Massage and electricity are dangerous measures in inexperienced hands Light braces which should maintain the parts in correct position Operative measures give brilliant results in well selected cases Rarely can a perfect functional result be obtained, but all can be benefited materially

DISCUSSION

Dr G G Buford, Memphis Anterior poliomyelitis is not confined to infants alone It has been my experience to find nearly as many cases of this disease in adults as in infants The etiologic factor in the production of anterior poliomyelitis is an inflammatory condition in the anterior horns of the spinal cord There are three classes of inflammatory conditions An exudate is present in all In one class the exudate is absorbed and those patients get well In others it is not absorbed In still other cases the cells are involved, and a paretic condition follows In the adult cases an infection results from anything which will produce a toxin

Dr W T Pride, Memphis Anterior poliomyelitis is an infection, and as typhoid selects the intestinal glands, so the infective organism of anterior poliomyelitis selects the ganglion cells especially the giant cells, of the anterior horns of the spinal cord There are those who believe that heat has a great deal to do with the development of the disease Operation in a great many cases is satisfactory By transplantation of the tendons a useless arm or useless leg has been made partially useful Various orthopedic apparatus are useful When the case is diagnosed early and paralysis has occurred, the general practitioner should send the patient to an orthopedic surgeon

Dr W L Wadlington, Memphis I have had under my observation for the last two months a woman three months advanced in pregnancy The trouble began with fever and an acute toxemia, resulting in complete paralysis of the body There has been a partial recovery from the paralysis in the upper limbs, but not in the lower I am waiting with much interest for delivery in this case to see what the outcome will be

Dr W C Campbell, Memphis In New York they have done a great deal by immobilizing the spine in the acute stage and in keeping the patients quiet The deformities which result from anterior poliomyelitis should be corrected as soon as possible We see comparatively few deformities from this disease in the clinics of America as compared with those seen in London and Vienna

Anxiety Neuroses

Dr S T Rucker, Memphis Anxiety and worry are distressing symptoms in many of the so called neuroses, but are most common and constant in neurasthenia, hysteria, melancholia, and psychasthenia In many cases of hysteria, anxiety and worry are annoying symptoms The patient may constantly refer to some sensation which she interprets as an incurable malady One patient, whose appetite and digestion were good, complained incessantly that she had an incurable stomach trouble Another patient had a morbid fear of dying In melancholia and psychasthenia anxiety takes the form of a fixed obsession or hallucination, and its manifestation is often distressing to witness One of my patients would walk the floor crying and displaying great agitation over the belief that she had brought financial ruin to her family When anxiety and worry are symptoms in the illness of patients, there is no drug or remedy that will take the place of psychotherapy The physician who has the ability to put his patient in a cheerful frame of mind and fix the belief that he will recover has at his command a most effective therapeutic procedure

Bacterial Vaccines, a Factor in Therapeutics

Dr William Litterer, Nashville In no instance have I failed to observe improvement in any mixed tuberculous affection I would encourage the use of vaccines as an adjunct to medical and surgical procedures in certain types of infections which up until now have stubbornly resisted all curative measures. In every instance a sinus or fistula of long standing, whether tuberculous or not should be given the benefit of vaccine therapy. Autogenous bacterines should be used when possible. Stock vaccines are uncertain. In every case of mixed tuberculosis (pulmonary or otherwise) beneficial results have been obtained by employing the autogenous vaccines and tuberculin.

Surgical Treatment of Goiter

Dr. W. T. Black, Memphis: Thyroidectomy is the usual procedure in hyperthyroidism but in cases with symptoms of beginning hyperthyroidism or where the symptoms are not severe enough to warrant a thyroidectomy, ligation will often cure the patient. It is also indicated in every acute case, and in chronic cases which have resisted other forms of treatment, and in which there are secondary changes in other organs. Ligation may be performed either under general or local anesthesia. The ligation of the upper poles has met with satisfactory results in a limited number of cases. I believe if we study the mental as well as the general condition of our patients, and operate oftener by ligation as a preliminary measure, we will reduce to a minimum the risk these patients run.

DISCUSSION

Dr. B. F. Turner, Memphis: Surgery of the thyroid gland involves one other branch of medicine which heretofore has been frequently overlooked. The effect of hyperthyroidism as a cause of dementia has not received the attention that it deserves. Alienists are beginning to recognize that here and there is a patient who is a proper subject for the surgical infirmary rather than for the detention house for the insane. The operations that have been performed on this class of cases have given satisfactory results. I wish to emphasize the necessity of consulting a surgeon with reference to the possible existence of hyperthyroidism and its correction by operation in those cases in which some form of mental derangement would seem to suggest the advisability of incarcerating a patient in an insane asylum.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting Held Oct. 12, 1910

The President, Dr. Henry Leffmann, in the Chair

SYMPOSIUM ON FOOD IN HEALTH AND DISEASE

Dr. John Marshall spoke on the "Chemistry of Foodstuffs."

Food in Health

Dr. W. E. Robertson: Food in health is a subject that receives too little attention from the physician. Dietetic errors in the direction of quality and quantity are probably responsible directly for much of the minor ill health with which the doctor has to deal, and indirectly, by lowering the body resistance, inviting the development of acute infections, or that which is more serious, metabolic disease. Foods may be discussed very broadly as nitrogenous and non-nitrogenous, and according to their nutritive constituents as proteins, carbohydrates and fats. Proteins we regard as tissue builders and repairers of waste tissue. Carbohydrates and fats produce energy and both, but especially the carbohydrates, are regarded as protein sparers. I consider the total amount of food requisite to furnish about 3,500 calories per day, the amount generally agreed on as being essential for the average worker. I would commend especially a nut diet as being both economical and furnishing a high food value.

Food in Disease

Dr. M. Howard Fussell, Philadelphia: I believe that in the vast majority of cases which a physician is called to attend, nursing, proper food, and fresh air are of much more importance than drugs. The food prescribed in disease must be of such a character that it will not embarrass the already weakened powers of digestion. On the other hand it is just as important that the food contains sufficient calories for the maintenance of nourishment. The chief value of beef tea or other broth without albuminous matter, is in the mental effect which such foods create and the water and salts which they contain. Water should be administered regularly to patients who are ill enough not to ask for it. When practicable the caloric value of the food we administer to our patients should equal that of a diet of health, an average of 2,500 calories daily being about the necessary amount. With patients suffering from typhoid I now add to the diet soft eggs, soft toast, cereals well cooked, very finely minced meats of various kinds.

DISCUSSION

Dr. James Tyson: The only condition under which food acids can be harmful to gouty patients is their excessive use so as to overwhelm the stomach contents with acidity. Regarding the use of red and white meats, it is much worse for the patient to take half a pound of chicken than a quarter of a pound of beef. In acute Bright's disease or in the complications due to uremic poisoning, there is nothing comparable to a milk diet. In typhoid fever I am in the habit of saying that a suitable diet is one of liquid of which milk is the principal portion. Farinaceous and soft foods are suitable for these cases. I do not permit eggs to be given until the patient is convalescing. Ice cream is an admirable food in typhoid fever. Individual peculiarities demand changes in diet.

Dr. M. B. Hartzell: We know too little about the chemistry of digestion and the metabolism of food to formulate any definite rules as to the treatment of our patients by diet. We can advise our patients intelligently only by having them under observation over a considerable period of time. Generally speaking, I should favor a fairly liberal diet, with fruit included.

Dr. H. B. Allyn: What might be called the time habit is important in diet. For example, fruit in the morning is much less apt to disagree with digestion than when taken at night. Eating late at night is apt to cause difficulty because the whole digestive apparatus is less energetic than at an earlier hour. If we could manage to control constipation by dieting measures it would be much better for the patient than the use of pills.

Dr. Richard C. Norris: From the obstetric standpoint, I can say nothing that is not already known. I know of no one single factor that adds so much to the danger of the pregnant woman as the fault of over eating. I think it a good practical working rule to suggest to such women the omission of the mid-day meal and the substitution of milk and crackers. Of primary importance from the standpoint of diet is the toxemia of pregnancy. I have been much impressed with the importance of a milk diet in these cases. By some it is regarded as the mainstay in the prophylactic treatment of eclampsia.

Dr. Kate W. Baldwin: I recall the case of a pregnant woman who passed the full term of her pregnancy on rectal feeding and was delivered of a well developed 8 pound child.

CITY OF WASHINGTON BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

Regular Meeting, held Nov. 11, 1910

The members of the Association of Official Agricultural Chemists were guests at this meeting and the subject under discussion was

The Pharmacopeial Convention of 1910 and the Prospective Pharmacopeia of the United States

Dr. H. W. Wiley, president of the United States Pharmacopeial Convention, presented a communication in the course of which he outlined his opinions regarding the Pharmacopeia and the methods to be followed in revising it. Among other things Dr. Wiley said:

"One of the most important points, it appears to me, is to see to it that the two great interests represented in the revision of the Pharmacopeia work is complete harmony in the revision which is now taking place. I refer on the one hand to the profession of pharmacy and on the other to the profession of medicine. Practically all of the members of the committee represented one or the other of these great professions. I may say further that the two great professions are equally interested in the matter, but from different points of view. Complete harmony will be secured if the members of the two professions on the committee seek to restrict themselves as nearly as possible to their own peculiar fields of investigation. * * * The pharmacist and the physician, therefore must join hands and work side by side to secure what is best in this new revision. I may say broadly that the line of cleavage is distinct in respect of the attitude of these two professions. The physician is the one undoubtedly who should study the therapeutic effects of drugs. His training has fitted him for this function and he has been taught, usually by large experience, to note with scientific accuracy the effects which different drugs produce on the human organism, especially in a state of disease. While the physician is not a pharmacologist necessarily in that he is not called on to determine the effects of drugs on perfectly healthy animals, he must be a pharmacologist in that other sense of studying the effects of drugs on the diseased organism. In other words, he is more of a practical than a theoretical pharmacologist. The pharmacist, too, is interested in pharmacology and it is perfectly proper that he should also study, for his own benefit and for the benefit of his profession, the action of drugs, but not with a view of administering them to a patient.

ADMISSION OF USELESS DRUGS

"It may be said that the Pharmacopeia is no place to speak of the therapeutic effects of drugs, and this may be true. Let us grant that this is the case, nevertheless a drug only finds a place in the Pharmacopeia because of its therapeutic effects, which must be well understood, although they may not be set forth in the Pharmacopeia. In other words, it seems to me that the medical members of the Committee on Revision would have a right to object to the introduction into the Pharmacopeia of drugs the therapeutic effect of which is unknown or *nil*, and to require that the Pharmacopeia should include only those drugs which really have a therapeutic value. I know it is difficult to properly discuss so delicate a question when the interests of two professions are at stake, but I will ask if there could be any just reason for including in the Pharmacopeia a remedy the therapeutic value of which is zero, or at least of an uncertain quantity? I can see no just ground for admitting such a drug to standardization in the Pharmacopeia.

"It may be that the pharmacist would have a greater business if he sold large quantities of drugs which produce no therapeutic effect, and it may also be true that physicians would have better success at times if they gave more placebos, producing no effect, but it seems to me that is not the question here. Drugs are supposed to be useful even if their abuse may be dangerous, and unless they have some recognized utility they can not with any justice find a place in the Pharmacopeia. That it was the purpose of the Convention to exercise a wise discrimination in respect of the new matter which should go into the Pharmacopeia and the old matter that should go out is evident. In fact it will be remembered that the Convention took at first a somewhat radical stand in regard to this matter, which was afterwards modified on the distinct understanding that the Executive Committee on Revision should act as a strict censor in regard to these matters.

"The subject was also taken in consideration in the section on pharmacology of the American Medical Association, which reached very positive conclusions that the Pharmacopeia should be freed from all useless preparations, and even from those of doubtful efficacy. Equally severe scrutiny of new matter is also to be recommended. New remedies which have not been established by long experimental use are to be looked on with suspicion, such as buttermilk as a prophylactic against premature death, and many other substances which are fads and fashions rather than remedies founded on facts. At the same time it must be remembered that while one physician might deem a drug of no therapeutic effect, there might be a thousand who would think it valuable, and in such case the wish of the majority should be followed.

THERAPEUTIC NIHILISM

"There is a growing disposition, and I may say perhaps happily so, to discredit the therapeutic value of drugs. Advancing knowledge has convinced thinking people that drugs as a rule do not cure, in fact, under the Food and Drugs Act prosecutions have been instituted for false claims respecting the virtues of drugs because they are held up as a cure for certain diseases. It seems to me that there is a just prejudice forming, not only among the laity, but also in professional circles, against elaborately compounded articles consisting of a great many different substances. These articles seem to be prepared with an idea that there may be something in the compound which will hit the mark. It might be very properly called 'shot gun' pharmacy and 'shot gun' therapeutics. It is perhaps very natural for a physician who is uncertain about a case to fire such broadsides in the hope that some of the preparations may become effective. The pharmacist, of course, has nothing to do but to fill the prescription which is sent to him. This prejudice against drugs has doubtless been greatly augmented by the cure-all nostrums which have been so widely advertised, and I may say that in spite of all the work that has been done the cure-all fakir still has a firm hold on the American public. I have often been surprised, and even very recently, by the unqualified confidence reposed in a patent nostrum by intelligent people.

"There is a constant question of the efficacy of drugs and certain schools of therapy have sprung up offering to cure diseases by diet, by exercises, by contortions, by electricity or by all combined, preaching the dangers of the drug habit and its lack of efficiency. All of these things only accentuate what every physician knows, namely, that drugs are no certain cures, and even frequently no certain aids. This condition of disbelief and unrest should not be allowed to go too far because we know that drugs are efficient and useful. It is important, therefore, that in the Pharmacopeia such safeguards should be thrown around the remedies therein described and such conservatism practiced in speaking of their therapeutic effects as to inspire a greater degree of confidence in the minds of the public at large in the utility and efficiency of these remedies.

"This condition of scepticism in the public has been described by one author as 'therapeutic nihilism' and the growth of this distrust in connection with medicinal reagents is clearly pointed out. Much will be done to stem the tide of this destructive tendency by the wisdom and care with which the next United States Pharmacopeia is compiled. There is resting on the Pharmacopeial Convention and its general and executive committees of revision a task of great magnitude attended with obligations of the most serious character."

PROF. JOSEPH P. REMINGTON, chairman of the Committee of Revision, outlined the nature and amount of work that had been accomplished during the summer months. He expressed the belief that the real sentiment of both physicians and pharmacists was neither in favor of a skeleton pharmacopeia nor of a padded pharmacopeia, but of what he was pleased to designate as a sane pharmacopeia.

Prof. Remington also pointed out that for many years the Pharmacopeia was a closed book to the medical profession because its members had been led away from it by the detail man of the manufacturer and proprietary medicine maker. The resulting decay of therapeutics has brought about a state of confusion and a tendency to therapeutic nihilism that he considers to be most unfortunate. He holds that physicians do not know a sufficient number of U. S. P. preparations and do not appreciate the fact that their fellow practitioners in different parts of the country, and in different cities, use totally different medicines for which the Pharmacopeia of the United States should furnish standards.

DISCUSSION

Prof. I. V S Stanislaus, Philadelphia, asserted that the paper by Dr Wiley had been to him a revelation He had been particularly impressed by the reference to needless duplication of drugs having similar properties, and willingly endorsed the proposition to delete useless duplications from the Pharmacopeia He pointed out that the content of previous pharmacopeias represented the selection and dictates of the few and not of the many and hoped that greater care would be exercised regarding admissions and deletions

Dr Murray Galt Motter secretary of the Pharmacopeial Convention, pointed out more particularly that the work and the function of the executive committee as outlined by Dr Wiley, was in accordance with the intent and purpose of the board of trustees of the former convention He also pointed out that the professional representation on the General Committee of Revision was not alone interesting, but rather significant Of the total number thirty four (indeed thirty five when a vacancy was filled) were nominees of the pharmaceutical caucus and but sixteen were nominees of the medical caucus Of the latter it is also interesting to note that only two reached the executive committee

In connection with the scope of the Pharmacopeia he pointed out that the Pharmacopeial Convention by a vote of ninety five to forty seven emphatically recorded its conviction that substances 'whose value and use have not been established" should not be included And then, on the plea that it was unnecessary to hamper the committee elected for the purpose of carefully selecting the list of substances, the convention was induced to strike out, by a vote of one hundred and twenty three to forty this 'ambiguous and dangerous provision," thus leaving the final decision regarding scope with the members of the General Committee of Revision

With reference to the business of the Pharmacopeial Convention he asserted that it had been pointed out by several observers that 'the financial statement made to the Convention was in no wise satisfactory, explicit, or in justice to the intelligence of the body to which it was delivered" In commenting on 'the enormous sales of the book amounting to nearly 40 000 copies the first year" he pointed out that as a matter of fact the sales of the Pharmacopeia did not reach 40 000 until the middle of 1908

In concluding he expressed the belief that if those who are to effect the work of revision do not clearly realize their responsibility to the convention and to the several professions represented, and produce a book of standards, indeed, but of standards for substances of established value and use, the next Pharmacopeia, instead of being a force, will be a farce

Dr Reid Hunt, chairman of the American Medical Association Committee on the Pharmacopeia, pointed out that regarding the scope of the book there were two diametrically opposed views, both of which deserve consideration The manufacturer and the pharmacist desire to have a book of standards that will include all of the substances that are, have been or may be used as medicine, while the medical practitioner desires to have a book of standards for the approved therapeutic agents only so that the book may be used as a basis for instruction in medical schools and as a guide to the physician who is willing to adopt and use recognized standard remedies It must be evident that these two objects are so totally different that it would be practically impossible to agree on a compromise, and any attempt to do so would be considered a straddle that could be acceptable to but few

He heartily endorsed the stand taken by Dr Wiley regarding the scope of the book and expressed the belief that physicians and pharmacists should not be expected to furnish standards for Custom House officials and 'patent medicine" manufacturers As chairman of the Committee on the Pharmacopeia of the American Medical Association he had been able to get into communication with thousands of medical practitioners in various parts of the United States, all of whom were willing to use the best medicines that were available and desirous of obtaining authentic information regarding the probable efficiency of drugs.

Dr Hunt outlined the methods that had been employed by his committee to secure the cooperation of the several sections of the American Medical Association and referred more especially to the correspondence that had been had with medical men in active practice who were also teachers of materia medica and therapeutics in medical schools and colleges, and asserted that despite the fact that the evidence thus secured had been submitted through the Pharmacopeial Convention to the Committee on Revision, many of the members appeared to be willing to ignore the wishes of physicians and that the indications were that the scope of the forthcoming Pharmacopeia would again represent the views of but a limited number of individuals

As an indication of the opinions held by the better informed medical men he quoted Dr. Abraham Jacobi, the Nestor of American physicians, who in discussing the content of the present Pharmacopeia deplored the fact that the makers of the Pharmacopeia were not willing to restrict the book to the best remedies only

Dr W M Barton seconded the remarks made by Dr. Hunt and asserted that he had also come to the conclusion that there are two diametrically opposed opinions regarding the scope of the Pharmacopeia and was satisfied that the book cannot, as it now stands, be accepted by medical men as a guide He suggested the possibility of limiting the medical recognition of drugs by introducing a fair statement of the physiologic action of the substance with each description

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

November 19

1 Nervous Affections and Adjustments of the Eyes G. T. Stevens New York
2 Pathogenesis of the Toe Phenomenon A Gordon, Philadelphia.
3 *Extramedullary Spinal Cord Glioma D Inglis, Detroit, T. Klingman, Ann Arbor, and M Ballin, Detroit
4 Proper Method of Administering Ether A D Young, Oklahoma City
5 Anesthesia Dangers I D Frescoln, Philadelphia
6 Local Anesthesia in General Surgery L F. Watson, Oklahoma City
7 Determination of the Dose of Stovain in Spinal Anesthesia by Blood Pressure Observations M Sallom Philadelphia
8 Tonsil Grasping Forceps A M MacWhinnie Seattle, Wash
9 *What Is the Direct Cause of the Seizures of Epilepsy? N P. Levin, Edgewater, Colo
10 Reveries of a Young Practitioner F McK Bell, Ottawa, Ont, Canada

3 **Extramedullary Glioma**—The course of the disease in this case was that of a slowly progressive segmental lesion, in the earlier stage of development unilateral, giving the clinical aspect of the Brown Séquard symptom complex The characteristic pain, distinctly localized, due to nerve root irritation, was prominent from the beginning and at no time did the diagnosis of spinal tumor seem doubtful The patient was seen very early by Dr George Dock At that time the only symptom was a pain sharply circumscribed in the one area supplied by the seventh thoracic nerve There were no other symptoms, and Dr Dock concluded that the cause was not due to any disturbance of the internal organs, and that it was a distinctly localized condition limited to the seventh thoracic nerve It was clearly shown by the attachment of the tumor that there could not have been at the beginning of the neuroglia proliferation any involvement of the corresponding segment Although originating very close to the spinal cord itself, the pain was referred from the nerve root The tumor was removed and the patient made a complete recovery

9 **Epilepsy**—Levin holds that vascular phenomena precisely similar to those occurring in asthma, or angioneurotic edema, occur in the brain with each epileptic seizure The violent symptoms occurring during an epileptic fit are explained by the sudden increase in the intracranial pressure entailed by this exudation within the rigid, unyielding walls

of the skull As soon as the pressure within the cranium has readjusted itself the symptoms will pass off To support his contention for the inclusion of epilepsy within the class of angioneurotic affections various facts are brought forth In common with the other manifestations of the exudative diathesis, it has a constitutional irritability of the nervous system as its principal etiologic factor. Just as attacks of bronchial asthma have been sometimes associated with urticaria, or angioneurotic edema of the hands or feet, or have been known to alternate with attacks of hay-fever, so attacks of epilepsy have been known to alternate with attacks of bronchial asthma—as stated by Salter Furthermore, the premonitory symptoms which usher in some attacks of asthma are essentially the same as the auræ of epilepsy Since, according to this theory, each epileptic seizure is associated with an increase of intracranial tension it has occurred to Levin that possibly a decompression operation would be of service in this disease By removing a portion of the unyielding skull and substituting instead an expansile diaphragm in the shape of the scalp it will allow of quicker adjustment of intracranial tension, and thus, perhaps, diminish the frequency or severity of epileptic seizures

Medical Record, New York

November 19

11 Chemical Problems in Diabetes Mellitus A Magnus Levy, Berlin
12 Causes of Death from Shock by Commercial Electric Currents, and the Treatment E MacD Stanton, Schenectady, N Y and A Kilda Albany, N Y
13 Use of Thiosinamin in Treatment of Cicatrices Following Burns T E Mears Philadelphia
14 Restoration of Inhibitory Qualities in Liver Extracts D M Kaplan New York
15 A New Theory of Eclampsia J R Mitchell, Fort Worth, Texas

Boston Medical and Surgical Journal

November 17

16 Operative Treatment of Atresia of the Vagina W P Graves, Boston
17 Cancer of the Scrotum R M Green Boston
18 Clinical and Bacteriologic Researches on Mikulicz s Method of Rendering the Peritoneum Resistant to Surgical Infections E De Paoli Perugia Italy
19 *Technic of Arthrotomy C F Painter and A P Cornwall, Boston

19 **Technic of Arthrotomy.**—The authors made several attempts to preserve motion after arthrotomies by the injection of sterile oil, but were unable to satisfy themselves that the oil exerted any strikingly helpful influence on the preservation of motion

Lancet Clinic, Cincinnati

November 12

20 Functional Psychoses C F Read Hospital Ill
21 *Etiology of the Functional Neuroses E S Everhard and G Felker Dayton Ohio
22 Conclusive Researches in Metabolism H R Harrower Chicago
23 More About Ehrlich s "606 from Foreign Letters A O Zwick, Cincinnati

21 Abstracted in The Journal, Oct. 1, 1910, p 1221

Kentucky State Medical Journal, Bowling Green

October 15

24 *Preventive Medicine J E Wells Cynthiana
25 Responsibility of the State in the Care of Its Dependents F Billings Chicago
26 Abdominal Crises Due to Pathologic Changes in Meckel s Diverticulum Other Than by Obstruction by Band G A Hendon Louisville
27 Something Old and Something New in Medicine D O Hancock Louisville
28 Pellagra J A Van Arsdall Nicholasville

24. Abstracted in The Journal, Oct 15, 1910, p 1400

Archives of Internal Medicine, Chicago

November

29 *Use of Pure Lipoids and Alcoholic Extracts With Active and Inactive Serum in the Serodiagnosis of Syphilis T Mac Rae A B Eisenbrey and H F Swift, New York
30 Wassermann Reaction in the Pathology Diagnosis and Treatment of Syphilis R M Pearce New York
31 *Peculiar Elongated and Sickle Shaped Red Blood Corpuscles in a Case of Severe Anemia J B Herrick Chicago
32 *Elimination of Bacteria from the Blood Through the Wall of the Intestine A F Hess, New York
33 *Experimental Lung Anthracosis L S Mace San Francisco
34 *Induction of Pancreatic Activity by Removal of the Adrenals J E Sweet and R Pemberton, Philadelphia
35 Fatal Sodium Chlorid Poisoning H Brooks New York
36 *Experimental Study of the Resistance to Compression of the Arterial Wall T C Janeway and E A Park New York
37 *Cutaneous Tests with Corn Extracts in Pellagrins A D Hirschfelder Baltimore

29 **Complement Fixation Tests for Syphilis**—The authors have found that the pure lipoid" antigen (ether extract) has proved the more satisfactory It has given, with syphilis, the largest percentage of strongly positive reactions by all three methods The alcoholic extract antigen, when used with active serum has given the largest percentage of non-specific reactions Inactivation apparently destroys the power of a non specific serum to cause a positive reaction The Noguchi method using active serum, gives the most sensitive reaction in syphilis, the Wassermann and the Noguchi "inactive" methods stand in the order named One of the most important factors in securing reliable results, when active serum is employed, is the performance of the reaction within twenty four hours after the serum is obtained

31 **Peculiar Red Corpuscles in Anemia**—In the case cited by Herrick, the condition was evidently chronic as revealed by the history of the past three years, with yaws and suppurating otitis as predecessors, yet with acute exacerbations The condition was not clearly explained on the basis of an organic lesion in any one organ There was cardiac enlargement albuminuria and cylindruria, general adenopathy, icterus, with a secondary anemia not remarkable for the great reduction in red corpuscles or hemoglobin, but strikingly atypical in the large number of nucleated red corpuscles of the normoblastic type and in the tendency of the erythrocytes to assume a slender sickle like shape The leukocytosis with a rather high eosinophil count was also to be noted Syphilis was suggested by many of the facts, such as adenopathy and the conditions of the heart and kidneys, it might explain the anemia, the arthritis and perhaps also the temperature, cough and attacks of pain resembling hepatic or gall bladder disease for, as is well known, visceral syphilis may furnish a most bizarre group of symptoms The Wassermann test was not in use at this time The scars said to have been due to yaws were like those left by syphilis The patient coming from the tropics, one thought of intestinal parasites such as uncinaria as a possible explanation of the anemia and the eosinophilia What were thought to be eggs were found on one occasion only, and after thymol there was temporary improvement The odd blood picture made one examine for possible toxic effects of the coal tar preparations, but neither from the history nor from the examination of the urine was there any evidence that such drugs were habitually taken The question of diagnosis, therefore, remains an open one unless reports of other similar cases with the same peculiar blood picture shall clear up this feature

32 **Elimination of Bacteria**—As a result of his experiments, Hess states that bacteria, using the *Bacillus prodigiosus* for the test, are excreted from the blood, not only by way of the liver through the bile, and the kidneys through the urine, but also, to a less extent, directly through the intestinal wall This was found to take place in one hour when one platinum loop of culture medium was inoculated In these experiments all other paths of access from the blood to the lumen of the intestines were absolutely closed off, including the path from above by way of the pylorus, and the entry by way of the pancreatic and the bile ducts It may be argued, says Hess that the severity of the operative procedure contributed to the result by rendering the intestinal wall less resistant, and by increasing its permeability It may be answered that this argument may be brought forward in the case of all experimental data In the experiments performed, the operations were carried out quickly and with as little handling of the intestines as possible Moreover, the question of complicating peritonitis or inflammatory reaction did not enter, as, apart from the careful asepsis observed, in almost all cases the animal was killed shortly after Although it is a well recognized fact that bacteria can pass with the lymph stream through the intact intestinal mucosa and then migrate from the lumen of the intestine to the blood, the reverse phenome

non, namely that they pass from the blood through the mucosa into the intestine, has, as far as Hess is aware, not previously been demonstrated

33 **Experimental Lung Anthracosis**—Purified talc was injected by Mace into the peritoneal cavity and after a certain time the animal was killed and the organ under observation completely burned in a platinum crucible The residue was treated on the water bath with hydrochloric acid In control experiments in which only a few milligrams of talc were added to the viscera, this substance was easily recovered and recognized Experiments made show that talc is not carried from the peritoneal cavity and mesenteric lymph nodes to the lungs during the maximum period of observation of these animals They do not prove that charcoal is not thus carried, but they add largely to the probability that it is not While it may be asserted, says Mace, that results obtained with talc cannot be applied to charcoal, on account of the great difference in density, size of particles, etc, it should be remembered that the silicates, under certain circumstances, form the basis of lung deposits, a natural lung silicosis being sometimes observed in potters and quarry workers Although the analogy between lung silicosis and lung anthracosis is certainly as great as the analogy between lung anthracosis and lung tuberculosis it cannot be held that these results apply conclusively to ingested tubercle bacilli They do, however, add important evidence against the theory that the origin of lung deposits is by way of the mesenteric lymph channels

34 **Adrenals and Pancreatic Activity**—The authors found that the removal of the suprarenal glands induces in dogs a flow of pancreatic juice This has been equaled in duration and activity only by the processes, natural or experimental which depend on activation by duodenal secretin Taken in connection with the inhibitory action of suprarenal and pituitary extracts on the pancreatic flow, this suggests a control over the pancreas, by the adrenals at least, in the absence of which the gland secretes more actively This activation of the pancreas may occur with a high systemic blood pressure, though it generally occurs when the systemic blood pressure is relatively low Hemorrhage may modify or prevent it There is some evidence to indicate that on the death of a dog from removal of the adrenals, there is present in the duodenum more prosecretin than exists in dogs otherwise operated on which have their adrenals intact, and which die after a comparable long period of etherization This preponderance may be a contributory factor in the production of a flow One of the factors which seems to make detection of prosecretin in human beings difficult is probably the lingering death of most of those from whom the intestinal extracts are made In clinical investigations of secretin comparisons should not be made between such preparations and those from freshly killed animals, unless this fact be borne in mind

36 **Resistance to Compression of Arterial Wall**—The object of this study was to determine whether the resistance to compression of the arterial wall introduces an error of any importance in the clinical measurement of systolic blood pressure by methods employing circular compression of the arm The material examined was as follows 1 Twelve common carotids from infants removed post mortem, of which ten gave results free from obvious error 2 Twenty three common carotids and four iliacs taken from adults removed post mortem of which twenty gave results free from obvious error 3 Six arteries taken from amputated limbs, of which four gave results free from obvious error 4 Thirty eight common carotids and four mesenterics from the ox, of which eleven gave results free from obvious experimental error 5 Six samples of rubber tubing of different caliber and lumen, one boiled artery. one esophagus, one segment of a small intestine Two other structures were examined An infant's esophagus was tested and found to compress absolutely at an increment of external pressure of only 1 mm Hg The intestine was also tested but fruitlessly, since its lax wall at once collapsed over the end of the outflow cannula The authors conclude that the arterial wall offers definite resistance to compression Other things being equal, small arteries with thin walls are more readily compressed than large arteries with thick walls In infancy and childhood the resistance of the arterial wall is a negligible factor in clinical blood pressure measurements. Arteries as large as the brachial may require only the pressure of a few millimeters of mercury for the obliteration of their lumen In adults with normal arteries and a normal range of blood pressure, the arterial wall is a practically negligible factor It probably never introduces an error greater than 10 mm Hg in clinical blood pressure measurements, a figure less than the spontaneous variations in pressure from minute to minute Atheroma, even of considerable degree, is without appreciable effect on the compressibility. Calcification of the arterial wall, when segments longer than 6 cm are examined, increases only moderately its resistance to compression The overpressure dependent on this factor in their experiments did not exceed 17 mm Hg In clinical blood pressure determinations, if a wide arm piece be used, and the return of the first fully developed pulse-wave be taken as the index, as recommended by von Recklinghausen, even advanced arterial thickening and calcification probably do not introduce an error of any importance The only factor determining the compressibility of an artery which seems capable of introducing an error of real importance in the clinical measurement of systolic blood pressure, is the state of contraction of its walls It is impossible from their experiments on surviving ox arteries to set definite numerical limits for this in man From these experiments, however, combined with the study of human arteries, after amputation and post mortem, the authors feel that a degree of hypertonic contraction of the brachial artery sufficient to cause an error of more than 30 mm Hg seems improbable, and of more than 60 mm incredible, during life The point of return of the pulse after obliteration, not of its disappearance during compression, should always be the criterion of systolic blood-pressure.

37 **Skin Tests with Corn Extracts in Pellagra.**—In these observations, cutaneous tests were made with substantially the same technic as that employed by v Pirquet in tuberculosis except that corn extracts were substituted for tuberculin in making the test The procedure was as follows: 20 gm of corn was extracted with 50 c c of ether, alcohol, 10 per cent sodium chlorid, or 0 2 per cent sodium hydroxid. The extract was filtered and 1/10 vol 5 per cent. phenol added to the clear filtrate so as to give it a content of 0 5 per cent phenol The ethereal extracts were allowed to evaporate at 46 degrees, until the odor of ether had disappeared The site chosen for the test was on the patient's wrist in an area which was subject to pellagrous pigmentation, thickening or desquamation, and, in most cases, was bare so as to be exposed to the action of light A drop of the extract to be tested was placed on the skin and a pin head area of epidermis beneath the drop was excoriated by the torsion of a v Pirquet stylet Into this excoriated area the extract was rubbed with a glass rod A series of epidermal punctures were made in this way in a line across the wrist, with another line of duplicate punctures above them. In each series there was a pair of controls in which only the pure sodium chlorid or sodium hydroxid solution or alcohol was placed on the skin Within half an hour after the puncture a small red or sometimes blanched areola and occasionally a small papule formed about the site of inoculation, but in only one case did this exceed 5 mm in size, and no differences could be noted between the areas about the punctures with corn extracts and the controls The reactions in sites which were nearest the midline of the forearm were often slightly more marked (areolæ about 1 mm larger than the rest), but these reactions were always quite as marked with the control fluids as with the extracts and hence were of little significance The reactions, which were regarded as negative in all cases, consisted of simple traumatic reactions, were watched for about half an hour and the sites of inoculation were again inspected three hours, twenty four hours, and forty eight hours later, as well as at frequent intervals between and after the expiration of these periods Extracts were made from samples of good corn, spoiled corn taken from the Arkansas Insane Asylum at the time of a pellagra outbreak, and a sample of spoiled corn containing *Aspergillus fumigatus* These reactions were all negative The results of

these tests, therefore, render it improbable that pellagra is due to or accompanied by a condition of hypersensitiveness of the individual to products derived from good or from spoiled corn

New York State Journal of Medicine

November

38 Post Operative Care of the Wound R S Fowler Brooklyn
39 Public Health Education and Progress of Medicine D L Kathan Schenectady
40 Mineral Waters of Saratoga Springs in the Rôle of Therapeutic Agents G H Fish Saratoga Springs
41 A Case of Duodenal Perforation J J Kane Binghamton
42 Laboratory Tests as an Aid in Diagnosis of Disturbed Liver Functions L Colegrove Elmira
43 Glaucoma R L Crockett Oneida
44 The Outlook—An Appreciation A S Chittenden, Binghamton
45 The Physician's Place in Society W W Skinner, Geneva
46 Animal Experimentation A W Armstrong Canandaigua
47 Pathologic Findings in the Right Iliac Fossa J P Creveling, Auburn
48 Blood Pressure—Its Significance and Treatment J K King, Watkins
49 Experiences with Eclampsia M P Messinger Oakfield
50 Diagnosis and Treatment of Anterior Poliomyelitis C F Clowe Schenectady
51 Tuberculosis in Children H S Goodall Lake Kushaqua
52 Blood Pressure in Advanced Arteriosclerosis H Schoonmaker, Clifton Springs
53 Toxic Amblyopia and the Optician D G Yates, New York

Journal of Biologic Chemistry, Baltimore

November

54 *Improvement of the Folin Method for the Determination of Urinary Ammonia Nitrogen M Steel, New York
55 Presence of Arginin and Histidin in Soils O Schreiner and E C Shorey Washington D C
56 Pyrimidin Derivatives and Purin Bases in Soils O Schreiner and E C Shorey, Washington, D C
57 Preparation of Creatinin from Urine O Folin and F C Blanck Boston
58 Preparation of Creatinin from Creatin O Folin and W Denis Boston
59 *Determination of Total Sulphur in Urine W Denis Boston
60 *Estimation of Urea S R Benedict, Syracuse, N Y
61 Benedict's Method for Determining Total Sulphur in Urine C L A Schmidt
62 Determination of the Amid Nitrogen in Proteins W Denis, Boston

54 **Determination of Urinary Ammonia**—That sodium hydroxid may be advantageously substituted for sodium carbonate in determining the urinary ammonia nitrogen in normal urines is shown by Steel In order to ascertain whether sodium hydroxid, in the proportions employed in previous experiments and in the presence of a relatively large amount of sodium chlorid, would produce ammonia from amino radicals, weighed amounts (0.1 gram) of urea, uric acid, glycocoll, taurin, leucin, tyrosin, hippuric acid, guanin, allantoin, and mixed creatin and creatinin were added separately and collectively to 25 c c fractions of normal urines and, after aeration in the usual manner, the amounts of liberated ammonia nitrogen were compared with those from the original urines In no case was any increase observed These same substances were also added to 20 c c fractions of a standard solution of ammonium chlorid instead of urine and the ammonia content determined Here again no increase was obtained In Steel's opinion these results show conclusively that the ordinary organic constituents of urine are not decomposed by the stated proportions of sodium hydroxid, in the presence of a physical excess of sodium chlorid and under conditions favorable for the liberation of all the inorganic ammonia in normal urine As a final test of the efficiency of the modified method, the ammonia in fractions of a given sample of normal urine was separated by the Folin method and also by the modified method The results completely confirmed the conclusion already drawn to the effect that, in the case of urines containing crystals of triple phosphate the Folin method fails to give perfectly accurate results for ammonia content These results also still further emphasize the statement that sodium hydroxid in amounts varying from 0.5 to 1 gram plus about 15 grams of sodium chlorid may be substituted for the sodium carbonate as prescribed in the Folin method The modified method has therefore, a number of points in its favor, since many samples of pathologic urine contain crystalline triple phosphate

59. **Determination of Sulphur in Urine**—A modification of Benedict's method has been devised by Denis so as to prevent the too rapid evolution of the oxids of nitrogen The method is as follows To 25 c c urine contained in a porcelain evaporating dish of approximately 4½ inches in diameter, add by means of a pipette or burette 5 c c of a solution containing 25 grams of copper nitrate (crystals), 25 grams of sodium chlorid and 10 grams of ammonium nitrate Evaporate to dryness on the steam bath or with a very small flame, then heat gently with a small flame, gradually increasing the flow of gas until the dish is heated to redness, and continue to heat at the latter temperature for from ten to fifteen minutes Allow to cool and add from 10 to 20 c c of 10 per cent hydrochloric acid On gently warming for a few moments a clear solution is obtained Transfer to a 200 c c Erlenmeyer flask, make up to 100 or 150 c c with water, heat to boiling and add drop by drop 25 c c of a 10 per cent solution of barium chlorid Let stand one hour or more and filter on a Gooch crucible A blank must be run on 10 c c of the oxidizing solution as copper nitrate generally contains traces of sulphate, and the amount of sulphate thus found deducted in the final calculations By the use of the above described oxidizing mixture the spattering which is so prominent a feature in the Benedict method is entirely eliminated the only precaution necessary being the avoidance of too rapid heating at the beginning of the fusions If at this time the burner be turned up so rapidly that clouds of nitrous oxid gas are evolved the result will be low

60 **Estimation of Urea**—In the use of Benedict's method a sulphuric acid bath is required which must be kept at a temperature of from 162 to 165 F The technic recommended for the estimation of urea in urine is as follows 5 c c of urine are introduced into a rather wide test tube, and about 3 grams of potassium bisulphate, and from 1 to 2 grams of zinc sulphate are added (The quantities of these salts may be measured roughly An excess of the zinc salt is to be avoided, as too large a quantity tends to cause slight frothing during the final distillation) A bit of paraffin, and a little powdered pumice are then introduced into the tube (to prevent frothing and spattering) and the mixture boiled practically to dryness either over a free flame, or more conveniently, by floating the tube in a bath of sulphuric acid kept at about 130 F The tube is then placed in a sulphuric acid bath which is maintained at from 162 to 165 F (not lower), and left there for one hour During this heating the tube must be weighted (a large sized screw clamp is convenient), so that it will be immersed in the acid for at least three fourths of its length At the end of the hour the tube is removed from the bath, the acid washed off under the tap a little distilled water poured into the tube, and the contents washed (with the aid of heat) quantitatively into an 800 c c distillation flask (A small amount of black pigment finally adhering to the sides of the tube may be disregarded, as the ammonium compounds are readily soluble) The fluid in the distillation flask is diluted to about 400 c c, rendered alkaline through the addition of 15 or 20 c c of 10 per cent sodium hydroxid (or 25 c c of 15 per cent sodium carbonate), and distilled for forty minutes into an excess of standard acid The residual acid is then titrated, and the urea nitrogen calculated (after subtraction of the previously determined ammonia nitrogen) In dextrose containing urines this method may be employed in combination with the Morner Sjoqvist method

Medical Fortnightly, St. Louis

November 10

63 Pleural Effusions Diagnosis and Treatment E B Montgomery Quincy, Ill
64 Recurrent Insanity and the Stigmata of Degeneracy M R Hughes St Louis
65 Individual Treatment of Morphin Habitués W F Waugh Chicago

American Journal of Physiology, Boston

November

66 *Influence of Alcohol on Nitrogenous Metabolism in Men and Animals L B Mendel and W W Hilditch New Haven, Conn
67 *The Isolated Kidney—Influence of Pulse Pressure on Renal Function D R Hooker Baltimore
68 Sensory Changes in the Skin Following Application of Local Anesthetics and Other Agents S I Franz and W C Ruediger, Washington D C
69 *Secretion of the Infundibular Lobe of the Pituitary Body and Its Presence in the Cerebrospinal Fluid H Cushing and E Goetsch Baltimore

70 Auricular Strips of the Cat's Heart J Erlanger, Madison, Wis
71 *Comparison of the Total Nitrogen Excretion of Either Kidney in Normal Individuals During Varying Periods of Time F B Barringer and B S Barringer New York
72 Production of Light by the Firefly J H Kastle and F A McDermott
73 Acapnia and Shock Failure of the Circulation Y Henderson New Haven Conn
74 *Metabolism of Development J R Murlin, New York

66 **Influence of Alcohol on Nitrogenous Metabolism**—A study of protein metabolism and utilization, and especially the partition of nitrogen in the urine, under the influence of alcohol was carried out on man and dogs under fixed and comparable conditions of diet In man the doses used were moderate, i e, 500 calories daily in the form of alcohol distributed in six portions With the animals a range of dosage leading to distinct intoxication was employed The findings in general were as follows There is no pronounced disturbance in the alimentary utilization of the foodstuffs Moderate doses exert a protein sparing action, which is succeeded by loss of nitrogen when larger quantities of alcohol are administered The partition of urinary nitrogen remains remarkably unaltered with the exception of an increased elimination of ammonia nitrogen (accompanying other evidences of perverted metabolism as indicated by the appearance of optically active (levorotatory) compounds in the urine, following "toxic" doses and a higher output of purins The theoretical significance of the latter which affects both the endogenous and exogenous fractions, is discussed at some length, and its bearing on the assumed nutrient properties of alcohol is indicated The most significant impression, perhaps, which the analytical data afford is the absence of pronounced alterations indicative of markedly disturbed protein metabolism, even when comparatively large doses are continued for days and weeks This has been interpreted as another evidence of the "factor of safety" in metabolism

67 **Isolated Kidney.**—A perfusion apparatus is described by Hooker which yields a pulsatile wave of pressure similar to the normal pulse wave and which allows of alteration in the magnitude of the pulse pressure The use of the apparatus in the study of isolated (dog's) kidneys yielded the following results With a constant mean perfusion pressure the amount of urinary filtrate varied directly as the magnitude of the pulse pressure With a constant mean perfusion pressure the amount of protein in the urinary filtrate varied inversely as the magnitude of the pulse pressure With a constant mean perfusion pressure, the rate of blood flow through the organs varied directly as the magnitude of the pulse pressure

69 **Secretion of the Infundibular Lobe**—The object of this communication is to call attention to the presence of a substance in the cerebrospinal fluid which gives the same reactions as extracts of the pars nervosa itself, indicating in all probability that the active principle long recognized as being confined to this anatomic subdivision of the gland is actually secreted into the ventricular cavity This would seem to establish the theory that the hyaline bodies of the pars nervosa, regarded by Herring as products of secretion of the posterior lobe——a view supported on experimental grounds by the authors—actually discharge as their histologic appearance suggests, into the third ventricle and represent the source of the active substance resembling pituitin in the cerebrospinal fluid

71 **Total Nitrogen Excretion of Kidney.**—The work done by the Barringers was carried out on eleven young men all in good health In collecting the urine the method of Albarran was employed As regards the total nitrogen in one case the quantities were equal In seven cases they varied by less than 1 gm to the liter In two cases they varied by between 1 and 2 gm to the liter The nitrogen urea plus ammonia-urea showed in three cases a variation of less than 1 gm to the liter and in six cases a variation of between 1 and 2 gm

74 **Metabolism of Development**—The nitrogen balance was followed by Murlin through two complete periods of gestation beginning with copulation, through parts of two others beginning several weeks previous to menstruation and through one period of menstruation which was not followed by copulation In the first two experiments the diet contained 70 calories and from 0 65 to 0 75 gm N. per kilogram daily From the first pregnancy one puppy was born, and the result was a net gain of 8 69 gm N to the mother's body From the second four puppies were born, and the result was a net loss of 55 6 gm. N from the mother's body. Up to the fourth week in these two experiments (on different dogs) the amounts of nitrogen lost from the mother's body were proportional to the weights of puppies delivered The effect of the menstruation was to cause a retention of nitrogen, which may be explained, in part at least, as a compensation for the amount of blood lost The results of these experiments, Murlin believes, support the idea that nitrogen loss from the mother's body is characteristic of the first half of normal pregnancy in the dog, particularly of the third and fourth weeks This is probably due to the action of proteolytic enzymes produced by the embryo and not yet limited by the placenta in their action to the maternal blood Nitrogen retention has been found in these, as in all other experiments, in the last half of the pregnancy The curve of nitrogen elimination in the urine shows that the retention in the last week of pregnancy is fairly even from hour to hour.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

November

75 *Personal Experience with Freud's Psycho Analytic Method J J Putnam Boston
76 Multiple Sclerosis with Primary Degeneration of the Motor Columns and Hypoplasia T H Weisenburg and S D Ingham, Philadelphia
77 The Case of Robert Bachman—A Study in the Psychology of Religion W W Richardson, Norristown, Pa

75 Abstracted in The Journal, July 16, 1910, p 247.

Chicago Medical Recorder

November

78 Art vs the Science of Medicine C B Reed Chicago
79 Evolution and Hopes of Civil Service in Illinois J C Mason
80 Reputable Stock Neisser Bacterin in Chronic Gonorrhea O F Scott, Argo Ill

Surgery, Gynecology and Obstetrics, Chicago

November

81 *Tuberculosis of the Body of the Uterus, Confined to the Myometrium R Alessandri Rome Italy
82 Thrombosis of Pelvic Veins Following Septic Abortion G Seeligmann, New York
83 *Tumors and Retention Cysts of the Appendix H Crouse, El Paso Texas
84 *Etiology of Cholecystitis J E Else Pullman Wash
85 Abscess of the Liver A B Herrick Ancon Canal Zone
86 End Results of Operations for Relief of Neurasthenia Associated with Various Visceral Ptoses W M Polk New York
87 *The Blood Supply of the Liver E Staehlin Newark, N J
88 *Surgery of the Thorax W C Quinby Boston
89 *A New Oil in the Treatment of Postoperative Abdominal Adhesions W G Crump New York
90 Chronic Intestinal Stasis W A Lane, London
91 Injuries of the Venous Sinuses of the Brain E M Brown, Chicago
92 *Bone Transference J McKenty Winnipeg Canada
93 Technic of 'Pole Ligation for Hyperthyroidism J H Jacobson Toledo Ohio
94 *A Modified Viscera Forceps A J Schoenberg Chicago
95 *Peritoneal Director W F Church Greeley Colo
96 Simultaneous Use of Cotton and Rubber Gloves in Operations J J Buchanan Pittsburg
97 Wire Carrier for Bone Suture J J Buchanan, Pittsburg

81 **Tuberculosis of the Body of the Uterus**—The author believes that his case is without any doubt one of tuberculosis of the uterus, originally of the myometrium That there was no affection of the ovaries, the tubes, the serous membrane, or the endometrium on the surface, excludes the primary localization in them as is the usual case On the other hand, the extension of tuberculous alteration in the muscle of the anterior wall toward the fundus in the form of a great caseous gumma surrounded on all sides by bands of muscles, and the diffuse caseous necrosis of the focus serve to demonstrate the original seat of the process, while the miliary tubercles scattered in the neighboring muscle and toward the mucous coat evidently indicate a more recent diffusion The localization in the myometrium, he thinks, must certainly have come by way of the blood-vessels, and probably is secondary to another focus in the organism, of which, however, clinically there was no trace, but it may exist if only in one or a few peribronchial or mesenteric ganglia without any actual symptomatic manifestation.

83 **Tumors of the Appendix.**—A study of the primary malignant growths of the appendix has convinced Crouse that the appendix should always be investigated while doing other intra-abdominal work; that many so-called spheroidal cell primary carcinomas of the appendix may be simply remains of imperfect tissue repair. Why, he asks, should the simple removal of an organ, an integral portion of a continuous structure, seemingly malignantly involved, give nearly an absolutely good prognosis in 57 per cent. of all malignant cases and 100 per cent. of the spheroidal type?

84 **Etiology of Cholecystitis.**—This work was undertaken by Else for the purpose of throwing more light on infection through the blood stream and to determine, if possible, which is responsible for the most cases of cholecystitis, the portal system or the general circulation. All work was done on rabbits, with the exception of two experiments quoted from a previous communication, and under strict aseptic and antiseptic precautions. The *Bacillus pyocyaneus* was used, as this organism is not present normally in the gall-bladder of the rabbit, and it is an organism that is easily identified. A ligature was placed about the cystic duct, care being taken not to include the cystic artery. One cubic centimeter of a virulent culture was injected into a superficial vein. Later, a culture was made from the gall-bladder. The ligature prevented the ascension of infection from below so that the bacilli could reach the gall bladder only through the cystic artery. Hence this series demonstrates that organisms in the general circulation reach the gall bladder readily through the terminal arteries and capillaries the same as they reach other organs. One cubic centimeter of the culture was next injected into the portal vein. Later, a culture was made from the gall bladder. This group of experiments showed that when organisms are injected into the portal vein they do not readily reach the gall bladder, but it does not show that they did not reach the bile, for they may have been carried on down the common duct instead of ascending the cystic duct into the gall bladder from whence the culture was made. In order to determine whether the organisms did reach the bile, the common duct was ligated and 1 cubic centimeter of the culture was injected into the portal vein. Later, cultures were made from the gall bladder. This group proves that when infection is injected into the portal vein it will reach the bile. There are two possible routes through which the infection may have gone, first, by passing through the capillaries from the portal vein to the hepatic veins, then through the general circulation to the gall tract, through branches of the hepatic artery, and second by passing from the capillaries through the normal liver cells into the bile radicals. Now if the cystic duct were ligated and infection injected into the portal vein, it would determine the route, for if it were by the general circulation the gall bladder would become infected, as the organisms would reach it through the cystic artery. On the other hand, if infection of the gall bladder be through the portal route, the contents of the gall bladder would be sterile, for with the cystic duct ligated there would be no way for the infection to reach it. Accordingly, the cystic duct was ligated, care being taken not to include the cystic artery. One cubic centimeter of the virulent culture was injected into the portal vein. Later, a culture was made from the gall bladder. This group proves that infection passes from the portal vein to the hepatic veins through the capillaries and thus reaches the gall bladder through the general circulation. And this series demonstrates, first, that infection of the gall bladder from the blood is through the arteries, and second, should infection reach the portal vein it is transmitted to the gall bladder through the general circulation.

87 **Blood-Supply of the Liver.**—The point Strehlin makes is that the commingling between the hepatic artery and portal vein is established through the medium of a tremendously ramified and interposed capillary system, and in consequence of which the circulation of the liver is very much retarded. In the case reported by him, the severance of the left hepatic artery shut off the blood supply of the left lobe of the liver completely. The effect was two fold: locally death to the entire lobe, since the hepatic artery is the nutrient vessel, and secondly, since the hemorrhage was tremendous, a lowering of the blood pressure sufficient to cause a voluntary arrest of the hemorrhage, yet was not sufficiently profuse to drain off enough blood to cause death. The hemorrhage from the parenchyma of the liver, though probably great, was arrested by the lowered blood pressure due to the arterial hemorrhage from the left hepatic artery, facilitated, *a priori*, by the lower blood pressure of the portal vein and hepatic vein. The anastomotic interchange of blood between the portal vein and hepatic vein would undoubtedly have led to a fatal termination, had both or either been severed, due to the close proximity of the vena cava, besides, the sparse supply of connective tissue and relatively poor supply of elastic fibers in the liver would have favored hemorrhage in spite of the lowered blood pressure. Hence, since the anastomosis occurs from the hepatic artery to the portal vein, and never in the reverse, and since the hepatic artery is a small vessel, and since the circulation in the liver is normally very much retarded and since the veins are devoid of contractile tissue, this is what happened. After rupture of the hepatic artery, the left lobe was drained and was no longer nourished. The blood pressure was reduced, causing an arrest in hemorrhage and a stasis at the areas of commingling with the hepatic artery and portal vein. The stasis led to the formation of thrombi in the radicles of the portal vein and hepatic vein.

88 **Surgery of the Thorax.**—In so far as Quinby's experimental observations go they confirm the experience of Meltzer, Carrel and Elsberg, who find that the method of intratracheal insufflation is very safe, and rests on a firm physiologic basis. In some thirty observations, some of them as long as four hours, others during such severe operations as total right pneumectomy and esophageal sutures, Quinby states that he has never had a death due to the method of anesthesia.

89 **Treatment of Postoperative Abdominal Adhesions.**—During the past three and a half years, Crump has introduced sterile oil into over 200 abdomens. In the majority of these cases, olive oil was the one employed. Many grades and kinds have been used owing to the fact that they had frequently to be obtained and prepared on the spur of the moment. After a careful study of the subsequent history of these oil cases, together with additional experience derived from its use in further cases, various points in which olive oil failed to fulfill all the requirements of a perfect menstruum gradually evolved. It was noted that normal surgical reaction was frequently more marked than in similar cases in which oil was not used. In a few cases, the oil seemed to fail in the prevention of postoperative adhesion (in two patients who subsequently had to be reoperated on, and in each of whom numerous adhesions were found), but, on the whole, it has been so gratifying in its minimization of the post operative sequelæ, especially adhesions, that Crump has come to believe that its use has marked a decided advance in surgery.

92 **Bone Transference.**—In McKenty's case, the diaphysis of the tibia was entirely absent except for a conical piece of bone at either end, one attached to the upper epiphysis with its point directly downward, and the other attached to the lower epiphysis with point directed upward, each piece being from 1½ to 2 inches long. So far as could be determined by palpation the intervening space of about 6 inches in length was devoid of osseous tissue. Just external to the original scar, an incision was made from the upper tibial epiphysis to the lower, the full length of the limb. Each conical stump was isolated and its point removed by saw, leaving a flat surface of a diameter about equal to that of the fibula. The fibula was then exposed and sawn through at points opposite to the ends of the stumps and the segment moved forcibly over into a sulcus prepared for it by a little blunt dissection. One silver wire suture held each end in apposition to the stump of the tibia. The wound was closed and the leg put up in a plaster cast. Healing occurred without complication. In September 1906, three months after operation, the man was able to walk on the leg. The final result is all that could be expected. The upper end of the transferred segment has been displaced outward and has formed the bony union with both tibia and fibula. Motion at the ankle joint is considerably less than normal.

94 **Modified Viscera Forceps.**—The holding portion of Schoenberg's forceps consists of rubber-covered incomplete rings, which permit rubber tubing to be put on or removed, when replacing becomes necessary The jaws of the forceps meet and lightly compress each other when closed at the first catch on the handle, and when closed to the third or fourth catch the hold is firm. Schoenberg says that these forceps may be made use of for catching and holding the tube, ovary, round ligament bowel, uterus, or any of the abdominal viscera without injury to the delicate peritoneum. It may be used to advantage in picking up an appendix through a small incision, or holding a bound down gangrenous appendix after slightly liberating it from its bed of adhesions Thus the appendix can be ligated and removed with greater ease through a smaller abdominal opening and when dealing with an acutely inflamed appendix or tube with less disturbance to the protective adhesions By the aid of these forceps, therefore, the intra-abdominal work can be done with greater ease, through a smaller opening, with less intra abdominal handling, and with no injury to the delicately covered structures.

95 **Peritoneal Director**—Church's peritoneal director consists of a flat spoon director with a handle at right angles so shaped that 3 inches of fat in the abdominal wall will not interfere with its being easily inserted and held in a proper position Its use is readily acquired After the initial incision is made in the peritoneum the director is inserted in the cut and pushed along the line of the proposed incision close to the under side of the peritoneum, which is cut rapidly with scissors or knife In sewing the peritoneum this instrument can be used for the same purposes as the Beck spoon, and acts better in fat subjects for it can be held level, which is impossible with the latter instrument The advantages of the peritoneal director may be stated briefly as follows· 1 It is safer than the usual method in enlarging the primary opening in the peritoneum 2 It saves time 3 It can be used to keep back intestines in closing the peritoneum

Archives of Ophthalmology, New York

November

98 Lymphocytosis as a Diagnostic and Prognostic Sign in Cases of Iridocyclitis After Perforating Injury H S Gradle Prague
99 Successful Removal of a Piece of Iron from the Vitreous W. N Sharp Indianapolis
100 Concentric Contraction of the Pupil P Fridenberg, New York
101 A Rare Form of Teratoma Orbitæ (Fetus in the Orbit, Orbitopagus Parasiticus) G Mizuo, Osaka, Japan

Interstate Medical Journal, St. Louis

November

102 Spondylitis Typhosa (Typhoid Spine) A Frick, Chicago
103 Ear Symptoms in General Diseases J J Kyle, Indianapolis
104 Pre-Hippocratic Medicine J D Comrie Edinburgh
105 Present Day Physiology of the Stomach C. Shattinger, St Louis
106 Anamnesia Syphilitica F R Fry, St Louis

Journal of the Missouri State Medical Association, St. Louis

November

107 The Surgeon and His Work F Reder, St. Louis
108 *Surgical Treatment of Uterine Myomata W J Frick, Kansas City.
109 Psychotherapy *vs* Eddyism. R William, St Joseph.
110 *Instruction of the Public in Antituberculosis Measures by a Traveling Car Exhibit G Homan, St Louis
111 Fallacies in the Understanding of Antiseptics and Germicides, Especially Bichlorid of Mercury M Pitzman, St Louis

108. **Uterine Myomata.**—The technic which Frick employs differs in no essential particular from that described by Dr Howard Kelly. The abdominal cavity is walled off with gauze, the uterus delivered and protected with gauze wrung out of warm salt solution. Incision is made in a generally transverse direction over the most prominent part of the tumor The myoma is shelled out and the incision closed by a figure-of eight hemostatic suture of No 1 iodized catgut. This effectively controls the oozing The line of sutures is covered as well as possible with the uterine peritoneum or with a fold of the broad ligament if feasible, by Lembert suture of No 0 iodized catgut, the knots being buried as well as possible. This second line of sutures is important in reducing the danger of adhesions

110 This article appeared in The Journal, Sept. 24, 1910, p 1072.

Providence Medical Journal

November

112 Treatment of Infantile Paralysis F. E Peckham, Providence.
113 Parent's Duty to Instruct His Son in Sexual Hygiene. W. H. Peters, Providence.
114 Drainage After Suprapubic Cystotomy. H. Terry, Providence.
115 Choice of Routine Method for Administering Ether. A. H. Miller, Providence.

Louisville Monthly Journal of Medicine and Surgery

November

116 Glanders W O Roberts, Louisville
117 The Owen Bill and Its Opponents S A Knopf, New York.

Bulletin of the Johns Hopkins Hospital, Baltimore

November

118 The Special Field of Neurologic Surgery H Cushing, Baltimore
119 *The Cammidge Test in Experimental Pancreatitis and Other Conditions G H Whipple, B S Chaffee and R F. Fisher, Baltimore

119 **Cammidge Test in Experimental Pancreatitis.**—As a result of their experiments the authors conclude that the Cammidge test is of little value in establishing a diagnosis of acute pancreatitis in dogs. If the test is negative, it is pretty strong evidence against an acute pancreatitis. The Cammidge test is of even less value in the condition of chronic pancreatitis in dogs and may be consistently absent even in extreme grades of this disease. A positive Cammidge test is not infrequent in normal dogs and men. The Cammidge test is almost constantly present in chloroform poisoning in dogs—a condition in which there is extensive liver necrosis and cell autolysis The test may be present in cases of pneumonia or in any condition in which there is active cell destruction and autolysis The Cammidge test may be produced experimentally almost at will by intraperitoneal injections of hydrolytic cleavage products These split products may be prepared by boiling pneumonic lung tissue (dog or man), or thymus for hours with dilute acid, neutralizing, filtering and concentrating to a clear fluid. The melting point of the crystals varies under different conditions indicating that the substance or substances are not constant. The method is open to various errors and too much depends on the personal equation particularly in the interpretation of the various crystals.

Maryland Medical Journal, Baltimore

November

120 Mercurials in Treatment of Tuberculosis P. Kintzing, Baltimore.
121 Prophylaxis of Mental Disorders, and the After Care of Convalescent Patients A. P Herring, Baltimore
122 Plea for the Betterment of Health in Country Districts C. W. G Rohrer, Baltimore
123 Care of the Demented and Untidy Insane. F. J Flannery, Baltimore

Buffalo Medical Journal

November

124 The Purins H R Hopkins, Buffalo
125 Astigmatism as a Cause of Gastric Diseases. G. M Gould. Ithaca, N Y.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London

November 5

1 Clinical Measurement of Diastolic Blood Pressure and Cardiac Strength L Brunton.
2 Greek Medicine in Rome C. T. Allbutt.
3 *Strangulated Omental Hernia with Very Few Symptoms. A Z C. Cressy.
4 Tetanus Treated by Chloretone R A Hobbs and E W Sheaf
5 The Nervous System in Chronic Alcoholism F W. Mott
6 *Therapeutic Use of Alcohol Vapor Mixed with Oxygen. W. H. Willcox and B J Collingwood.
7 *Pulmonary Thrombosis E Glynn and R E Knowles
8 *Method of Distinguishing Dead from Live Leukocytes C. Achard
9 Effects of Artificial Respiration on the Stillborn Infant. J. A. B Hicks
10 Variation in the Sizes of Red Blood Cells C Price-Jones
11 Polychromasia, and the Pathology of Hematomata G. R. Ward.

12 *Action of Oleic Acid and Its Soaps on the Blood A E Boycott
13 *Pathogenesis of Hereditary Hemophilia T Addis
14 *Absence of Altmann's Granules from Cells of Malignant Growths H Beckton
15 Chloroform Necrosis of the Liver G W Goodhart
16 Diagnostic Use of the Complement Fixation Method A Wassermann
17 Practical Value of the Wassermann Reaction H W Bayly
18 Complement Fixation in General R Muir
19 Structure of Complement in Relation to Deviation J H Smith
20 Diagnosis of Syphilis by Complement Deviation T W B Smith
21 Individual Properties of Complement and Organ Extract I McKenzie
22 Comparison of the Original Wassermann Reaction with Some of Its Modifications H R Dean
23 Guidance Afforded by Complement Fixation Methods L W Harrison
24 Lecithin and Cholesterin as Reagents for the Detection of Syphilitic Serums C H Browning
25 Complement Deviation and Carcinoma J O W Barratt

3 **Strangulated Omental Hernia**—A man, aged 60, complained of griping pain all over the lower abdomen, the pain was general, not tender near the appendix Cressy found a large swelling in the lower inguinal region the size of a fist, solid and hard, tender and without impulse He cut down on the mass It was indurated and showed no landmarks Presently a black mass came into view, and slitting up the cavity in which it lay, he laid bare as much as three fingers of gangrenous omentum Freeing the internal ring, and passing his finger into the abdomen, he felt a large hard mass extending as far as the middle line like a sausage With difficulty freeing this he got it through the opening, and found that it was a mass of gangrenous omentum as big as two fists Having freed it all around, he ligated it off close to the bowel, the left testicle and cord were also removed

6 **Alcohol Vapor Mixed with Oxygen**—Willcox and Collingwood call attention to the remarkable stimulant effect on the heart and circulatory system produced by the inhalation of oxygen containing alcohol vapor When this combination is used, it can be readily demonstrated in cases of cardiac failure that the addition of alcohol vapor to the oxygen administered produces a stimulant effect on the circulatory system much greater than that produced by the breathing of oxygen alone. These are the good effects of the oxygen plus an additional marked stimulant effect on the circulation caused by the contained alcohol vapor Oxygen which had been bubbled through absolute alcohol contained in an ordinary wash bottle was administered in several cases of illness in which cardiac failure was a prominent symptom, and it was found that the mixture produced a marked stimulant effect on the heart and circulation, decidedly greater than that produced by oxygen alone In some of these cases the administration appeared to have been the cause of the prolongation and saving of life In cases of pneumonia with cardiac failure the mixture of oxygen and alcohol vapor was found to be a valuable remedy

7. **Pulmonary Thrombosis**—Glynn and Knowles have found that spontaneous thrombosis is much commoner than embolism, in the proportion of 8 to 1 in 1,200 post mortem examinations from a single hospital They believe that an unaccountable acceleration of the pulse or respiration rate, beginning in the second week after a major operation, especially abdominal, and associated with slight pyrexia, suggests the possibility of spontaneous thrombosis and of a sudden fatal termination about the third week Cases of spontaneous thrombosis are overlooked from the assumption that only embolism can cause death in a few minutes, from neglect to remove and harden the heart and lungs together, and trace the distribution of the thrombi *in situ* in properly hardened specimens, and especially from neglect to make a thorough microscopic examination Even the association of the pulmonary clots with others in the systemic veins does not necessarily prove that the former are embolic Both may have arisen spontaneously and separately from similar causes

8 **Distinguishing Dead from Live Leukocytes**—Achard reports some researches on the distinction which may be drawn between dead and living leukocytes by using neutral red Living leukocytes are uncolored, or contain red stained or intraprotoplasmic vacuoles or granulations. Dead leukocytes show their nuclei red brown, and no intraprotoplasmic coloration Two solutions are used the one is physiologic salt solution with 6 per 1,000 of sodium citrate, the other is a physiologic salt solution with 1 per 1,000 of neutral red Mix in a tube 10 drops of each solution and add 1 drop of blood, or from 1 to 4 drops of the sediment of a centrifugalized exudate containing white cells, the tube is placed in the incubator and kept at the temperature of 37 C for twenty minutes, then the liquid is examined in a glass cell, and the living and dead leukocytes are separately enumerated Achard says that in the circulating blood there are no dead leukocytes, even in the gravest diseases If occasionally a few dead leukocytes are seen, fresh preparations must be made again and examined within five minutes, in order to avoid accidental injuries of the white cells, then they generally yield no nuclear staining In various exudates dead leukocytes are not scarce, especially in cases of suppuration In abscesses, the number of dead leukocytes suddenly decreases after the incision In acute meningitis, it appears that the variations in the leukocytes are valuable for prognosis, their disappearance is a good sign, and their increase an unfavorable indicator The red staining of the nucleus is also observed in recently dead and not yet disintegrated cells Therefore, a few stained nuclei are found in old suppurations, for instance, in tuberculous empyema, among a great deal of indistinct leukocytic remains

12 **Action of Oleic Acid on Blood**—Rabbits repeatedly inoculated with soaps of oleic acid subcutaneously became anemic. Blood regeneration was defective, there was no clear evidence that blood destruction was excessive Rats fed with oleic acid showed no changes in the blood

13 **Hereditary Hemophilia.**—Twelve cases were investigated In all the coagulation of the blood was delayed In those individuals in whom the symptoms were most marked the blood took an hour or more to coagulate, in one case in which the tendency to prolong hemorrhage was less marked the coagulation time was thirty six minutes, and in the slight cases it was about fifteen minutes This delay in coagulation was the only pathologic factor constantly present, and is in itself sufficient to explain all the symptoms There are good grounds, therefore, for regarding it as the proximate cause The cause was looked for in connection with the calcium, the thrombokinase, or the prothrombin Various quantities of calcium were added to hemophilic plasma but no amount reduced the coagulation time to normal Calcium was, therefore, not the cause With various amounts of thrombokinase the same result was obtained except when very large quantities were added, when coagulation was almost instantaneous in both normal and hemophilic plasmas But with lesser amounts, even such as were sufficient greatly to accelerate the coagulation of normal plasma, the coagulation of the hemophilic plasma still took much longer than the normal Further, there was found to be as much thrombokinase in hemophilic serum as in normal serum, and as much could be extracted from hemophilic blood corpuscles as from normal corpuscles Thrombokinase was, therefore, not the cause There was no quantitative deficiency as regards the prothrombin in hemophilic plasma, but a qualitative difference was present, which showed itself in the unduly long time required by the hemophilic prothrombin to change into thrombin in the presence of calcium and thrombokinase That this fault in the prothrombin was the sole cause of the delay in coagulation was shown by the fact that very small quantities of normal prothrombin when added to hemophilic plasma reduced the coagulation time to the normal The cause of hemophilia is, therefore, says Addis an inherited peculiarity in the constitution of the prothrombin whereby its activation into thrombin is retarded.

14 **Altmann's Granules and Malignant Growths**—Excluding new growths originating in cells not normally containing Altmann's granules, Beckton says, absence of granules from all the essential cells of a new growth indicates malignancy Presence of Altmann's granules in all or nearly all the essential cells of a new growth, is usually associated with non malignancy or only with malignancy of a special kind or limited degree (thyroid, ovary) In a tumor, the diagnosis of

which lies between inflammation and sarcoma, presence of Altmann's granules indicates the former, absence the latter.

Lancet, London

November 5

26 Greek Medicine in Rome T C Allbutt.
27 Traumatic Neuroses T R Glynn
28 *Desmoid Tumors R Morison and H Drummond
29 Cases Treated by Vaccine of Unknown Organisms E C. Bousfield
30 Primary Acidosis, Recovery S Bontor
31 *Use of the Faradic Current in the Treatment of Persistent Aphonia Following Laryngitis F Hernaman Johnson
32 *Phlegmasia Alba Dolens, Followed by Pulmonary Embolism and Infarction of the Lung, Recovery J C Curtis
33 *Influence of Quinin and Morphin on Phagocytosis H L Smith

28 **Desmoid Tumors.**—According to Morison and Drummond there are certain tumors—desmoids—originating in the abdominal wall, chiefly in the upper half of the rectum muscle, but also in connection with the other muscles, which are of considerable clinical importance They are likely to be mistaken for growths in the abdomen, unless the possibility of their occurrence is remembered. Their association with pregnancy is so frequent as to constitute more than a coincidence Possibly traumatism, by muscle stretching or tearing, is of etiologic significance A firm, but not tender, sausage shaped tumor, possessed of some mobility, across, but not in the direction of the fibers of the relaxed muscle with which it appears to be associated becoming fixed when that muscle is made tense and occurring in a woman recently pregnant, is a desmoid tumor The treatment is to excise the growth at once, along with a free margin of the surrounding structure, including the peritoneum underlying it.

31. **Faradic Current in Aphonia.**—A study of two cases of aphonia has led Hernaman Johnson to form conclusions regarding the pathology and treatment of persistent post catarrhal aphonia The larynx is primarily a mechanical device for the production of vocal sounds, and depends for its proper functioning even more on the integrity of its muscles and nerves than on the healthiness of their covering. In chronic catarrh of this organ the muscles become secondarily affected, and the delicate terminals of the motor nerves in all probability undergo an inflammatory degeneration An acutely inflamed mucosa doubtless demands local sedative applications, and even when the trouble has become chronic, astringent sprays paintings etc can often play an important part. But the tendency in many chronic cases is for the mucous engorgement to disappear to a great extent, whereas the damage to the neuromuscular apparatus remains Under such circumstances it is unreasonable to expect a cure by the ordinary means On the other hand, improvement may be looked for from such measures of 'natural therapy" as produce benefit in similar pathologic conditions elsewhere, e. g. in the form of facial palsy which is the result of exposure to the cold Hernaman Johnson says that in treating paresis of laryngeal muscles by faradization, the secret of success lies in the regular and persistent use of mild currents, which are not calculated to produce violent contractions of opposing healthy muscles If carefully applied for a prolonged period this form of electricity exercises a selective action on the affected structures and eventually restores their tone. Remarkable as are the results in suitable cases, however, it must not be regarded as a panacea for each and every form of catarrhal aphonia When the laryngoscope shows marked swelling and congestion of the cords, the mucous membrane must be attacked vigorously on orthodox lines Nevertheless, even when the mucosa is the part most at fault, the judicious use of the interrupted current, he declares, forms a valuable adjunct to routine treatment

32. **Phlegmasia Alba Dolens.**—Five days after delivery, Curtis's patient developed phlegmasia alba dolens in the left leg. Under treatment she progressed favorably for seven days when she was seized with violent pains in the left chest and shortness of breath The respirations were 72, pulse, 108, regular, but very feeble; the temperature, 100 F. The extremities were cold She complained of intense pain over the epigastrium precordia, and lower axilla An impaired note was found over the lower part of the axilla, and the breath sounds over this area were badly transmitted; no friction sound was heard. A soft systolic murmur could be heard over the pulmonary area and the second sound was accentuated. She suffered from retching and some vomiting, and the smallest amounts of liquid nourishment caused great pain over the precordia and lower axilla. As the stomach was dilated this was attributed to pressure on the diaphragm, interfering with cardiac and respiratory movements. Hot water bottles were applied to the feet and hot applications to the chest. She was given iced milk and soda-water with brandy in small quantities at frequent intervals. She was also given the following mixture every four hours:

℞		gm or c c
Bismuth carbonate	gr x	65
Aromatic spirits of ammonia	m xv	1
Compound tincture of cardamoms	m x	60
Muscilage, q s, and water................	℥i	30

On the following day the vomiting had ceased The respirations were 66; pulse, 102, and temperature, 101 F. She still had considerable pain over the lower axilla, and a marked friction sound could be heard over this area It was noticed that the swelling in the left leg had diminished considerably; it was much softer and free from pain. The pulmonary systolic murmur could still be heard, although it was not so marked. Three days later there was a considerably impaired note over the lower half of the upper lobe, and the whole of the lower lobe and axilla, with marked tubular breathing, bronchophony and pectoriloquy. The temperature was 99 F., respiratory rate 60, and pulse 96, regular, and of medium tension. The pulmonary sounds were clear. There was good air entry at the base, but dulness persisted over the axilla, the lower half of the upper lobe, and the upper half of the lower lobe; and over these areas there were still tubular breathing, bronchophony and pectoriloquy. There was still an occasional dry cough but no expectoration. The temperature was normal. The left leg had resumed its normal size. The lung symptoms gradually cleared up.

33. **Influence of Quinin on Phagocytosis.**—Smith made a series of researches to ascertain, if possible, the truth of the statement that quinin, like alcohol in excess, inhibits phagocytosis, and is therefore contraindicated in septic conditions. The opsonic index was taken as a basis for the work, with the additional factor of a solution of quinin and morphia. The very soluble acid hydrochlorid of quinin was selected because it is much less irritating than the sulphate and contains 8 per cent more quinin Morphin hydrochlorid, 1/8 grain, was added to each 10 grains of the quinin salt. It was roughly calculated that a 10 grain dose given to a person weighing 140 pounds, if entirely absorbed, would represent in the blood a proportion of 1 to 7,500. The influence of this solution (1 to 7,500, equivalent to a 10-grain dose) on the phagocytosis of different kinds of pathogenic organisms (e. g., streptococci, staphylococci, pneumococci, *B. coli*, *B. influenzæ*, *B pseudodiphtheria*, and *B. tuberculosis*) was contrasted with stronger and weaker solutions to ascertain the effect of varying doses In the majority of the eleven sets of experiments, there was an increased phagocytosis, always most marked with the 10 grain dose solution. Instead of inhibiting phagocytosis, the addition of quinin and morphia, in what may be considered the 'ideal" dose, greatly increased it. Smaller doses in all the groups were less effective, and one important fact was clearly demonstrated—namely, that very large doses (30 and 40 grains), instead of increasing, actually diminished phagocytosis, sometimes to the extent of 50 per cent

Clinical Journal, London

November 2

34 Complications of Gall Stones C H Fagge
35 Late Results of Operations on the Stomach H J Paterson
36 The Appendix in Middle and Later Life E M Corner.

Medical Press and Circular, London

November 2

37 Respiration in Health and Disease. J F. H Dally.
38 Specialists and Specialisms and Their Relationships to General Practice P S Abraham
39 Physical Aspects of Blood Pressure. T L Brunton
40 Uniformity of Method for Medical Inspection J. Kerr.

Annales de Gynécologie et d'Obstétrique, Paris

October, XXXVII, No 9, pp 577 720

41 *Non Cystic Ovarian Tumors M Mériel
42 *Stenosis of the Pylorus from Muscular Hypertrophy P Fredet and L Guillemot
43 *Megacolon M Patel

41 **Non-Cystic Ovarian Tumors** —Mériel discusses all kinds of ovarian tumors outside of cysts He has found only seventeen fatalities in the 289 operative cases on record since 1900, the mortality thus being from 4 to 1 5 per cent The percentage of permanent cures has been 15 per cent in the 372 cases compiled by Estor between 1881 and 1900 and the proportion is much higher in later series The figures show that the operative mortality is no higher when both ovaries and the uterus are removed The final outcome, he states, is much better for these non cystic ovarian tumors, especially the malignant, than with cancer of other genital organs or organs elsewhere This favorable prognosis includes both the operative and remote results, and it encourages early operation in case of a solid, movable tumor of the ovary As there is no reliable sign to differentiate the benign from the malignant tumors, there should be no delay; the abdomen once opened the surgeon can then decide whether to continue or abandon the operation Bilateral ovariotomy can be done without interrupting a pregnancy; after delivery the ovarian tumor should be removed without delaying for more than two or three days The favorable figures shown by the latest statistics permit more initiative than in the past Metzger has compiled 150 cases of ovarian cancer complicating gastric cancer, and Hartmann has reported a case in which he successfully removed a cancer in both ovaries and the primary cancer in the pylorus, the patient, a woman of 38, leaving the hospital in good condition, the operations were done in two sittings with a month's interval In Boeckel's case two large cancers were removed from the ovaries, necropsy a few months later disclosed an unsuspected cancer in the stomach

42 **Stenosis of the Pylorus in Infants from Muscular Hypertrophy.**—Fredet and Guillemot do not consider the anatomic lesion as necessarily entailing fatal impermeability, the superposed factors are the dangerous elements—the inflammatory swelling of the mucosa and spasm of the hypertrophied muscle which aggravate the stenosis These latter factors may be influenced by medical treatment, resting the stomach by feeding a teaspoonful at a time, merely iced boiled water at first, and combating the spasm by lavage, hydrotherapy and local heat The dietetic measures are the most important, the stomach will sometimes tolerate up to 5 gm of breast milk at a time These small amounts should be kept up for about two weeks and then the amount gradually increased The food with which he has been most successful is a milk gruel or malt soup Sedatives are given to reduce the tendency to spasm In the severe forms lavage may be useful but it sometimes aggravates the weakness, in one case it seemed to be responsible for the collapse observed In case operative treatment becomes necessary, partial pylorotomy by a straight longitudinal incision down to the mucosa, enables the muscular fibers to spread The lips of the longitudinal incision are then drawn apart and sutured together again to form a transverse line The two children on whom this technic has been applied recovered at once and are now healthy and well developed, Weber has reported two similar cases In 185 operations for this form of stenosis the immediate mortality was 47 per cent, but the mortality was only 26 31 per cent in the thirty eight cases in the last three years in which the operation was this partial pylorotomy Fredet and Guillemot warn especially against letting the child become chilled during the operation The outcome is immediately favorable in the children without existing gastro enteritis, but when this is present convalescence is a little retarded but not so much as might be expected Only two of the fifty three children operated on according to this preferred technic of posterior gastro enterostomy succumbed later to progressive debility

43 **Megacolon** —Patel gives a historical sketch of idiopathic dilatation of the large intestine or Hirschsprung's disease, and reviews 223 cases with an operation or necropsy, all but seventy three were in children. About 57 per cent. of the seventy four children operated on and 57 per cent of the forty one adults were cured by the operation His review shows that the mortality grows less as the children increase in years, under the age of 2 there were thirteen deaths for thirteen operations, some merely an exploratory laparotomy; from 2 to 5, only four of the fourteen children survived, but between the ages of 5 and 15 there were twenty seven recoveries to ten deaths and between 15 and 50 years of age there were twenty two recoveries to eight deaths, after the age of 50 only one recovery is reported to ten deaths He thinks that it is not enough to fasten or take up a fold in the colon, while resection is too serious, unilateral exclusion gives the best results from all points of view

Bulletin de l'Académie de Médecine, Paris

October 18 LXXIV, No 32, pp 197 220

44 *Paralysis of the Recurrent Laryngeal Nerve and Mitral Stenosis E Boinet

44 **Paralysis of the Recurrent Laryngeal Nerve and Mitral Stenosis** —Boinet reports two cases and discusses what has been published on this subject by Osler and others, all proving that recurrent paralysis is liable to accompany mitral stenosis, either from direct compression of the left recurrent nerve by the left auricle or by traction downward from the dilated and hypertrophied right ventricle or from both these factors This cause for the paralysis should be borne in mind after exclusion of the usual causes

Lyon Chirurgical, Lyons

November, IV, No 5, pp 421 512

45 *Spinal Anesthesia in Gynecology (Etude sur la rachistovainisation) Violet and Fisher
46 Operative Treatment in Cholelithiasis (Du choix de l intervention dans la lithiase biliaire) G Cotte
47 Traumatic Dislocation of the Scaphoid Bone in the Foot E Destot

45 **Spinal Anesthesia** —Violet and Fisher have compiled 30 000 cases from the literature to which they add 270 cases from Pollosson's gynecologic clinic, and discuss the special indications technic and results They regard raising the pelvis as decidedly dangerous at first, while the drug is diffusing, and this phase may last for twenty or thirty minutes The great danger of the spinal technic is the liability to stoppage of the respiration, this occurred twice in their 270 cases, but they were able to revive one of the patients In the fatal case necropsy disclosed an unsuspected pleural effusion which should have contraindicated general anesthesia, especially by the spinal technic Another fatality was evidently the direct result of lowering the patient's head too soon after the injection, some of the fluid had been lost in making the injection and the pelvis was raised at once The skin was incised seven minutes after the injection and the patient, an obese woman with cancer of the cervix uteri, stopped breathing and could not be revived They list further the details of thirty six other fatalities in European literature following injection of stovain, tropacocain, or novocain for spinal anesthesia In twenty cases the fatal syncope occurred within fifteen minutes and in others not until after several hours In four of the cases suppurative meningitis was evidently due to lack of asepsis in the technic In four other cases mechanical interference with the action of the lungs from an effusion was responsible for the fatality, in fourteen cases the cachexia or infection was already in a dangerously advanced stage In seven of the total thirty six fatalities the stovain must be directly incriminated they think Paralysis of legs or sphincters developed in sixteen cases, generally subsiding after a few days or months, but entailing fatal complications in bladder or kidney in two cases and fatal infection from an eschar in a third, while in three cases the paralysis or ataxia seems to be permanent Study of these cases shows a pre existing predisposition—syphilis or alcoholism—which should have contraindicated the method, or else the dosage was too large or asepsis violated The spinal method, the authors state, is particularly adapted for gynecologic operations, as the field is all in one plane innervated from the same segment of the spine; the relaxation of the muscles is complete, there is no vomiting; the operative shock is less than with other technics and there is no irritating action from the anesthetic on the lungs;

which lies between inflammation and sarcoma, presence of Altmann's granules indicates the former, absence the latter.

Lancet, London

November 5

26 Greek Medicine in Rome. T. C. Allbutt.
27 Traumatic Neuroses. T. R. Glynn.
28 *Desmoid Tumors. R. Morison and H. Drummond.
29 Cases Treated by Vaccine of Unknown Organisms. E. C. Bousfield.
30 Primary Acidosis; Recovery. S. Bontor.
31 *Use of the Faradic Current in the Treatment of Persistent Aphonia Following Laryngitis. F. Hernaman-Johnson.
32 *Phlegmasia Alba Dolens, Followed by Pulmonary Embolism and Infarction of the Lung; Recovery. J. C. Curtis.
33 *Influence of Quinin and Morphin on Phagocytosis. H. L. Smith.

28. **Desmoid Tumors.**—According to Morison and Drummond there are certain tumors—desmoids—originating in the abdominal wall, chiefly in the upper half of the rectum muscle, but also in connection with the other muscles, which are of considerable clinical importance. They are likely to be mistaken for growths in the abdomen, unless the possibility of their occurrence is remembered. Their association with pregnancy is so frequent as to constitute more than a coincidence. Possibly traumatism, by muscle stretching or tearing, is of etiologic significance. A firm, but not tender, sausage-shaped tumor, possessed of some mobility, across, but not in the direction of the fibers of the relaxed muscle with which it appears to be associated, becoming fixed when that muscle is made tense, and occurring in a woman recently pregnant, is a desmoid tumor. The treatment is to excise the growth at once, along with a free margin of the surrounding structure, including the peritoneum underlying it.

31. **Faradic Current in Aphonia.**—A study of two cases of aphonia has led Hernaman-Johnson to form conclusions regarding the pathology and treatment of persistent post-catarrhal aphonia. The larynx is primarily a mechanical device for the production of vocal sounds, and depends for its proper functioning even more on the integrity of its muscles and nerves than on the healthiness of their covering. In chronic catarrh of this organ, the muscles become secondarily affected, and the delicate terminals of the motor nerves in all probability undergo an inflammatory degeneration. An acutely inflamed mucosa doubtless demands local sedative applications; and even when the trouble has become chronic, astringent sprays, paintings, etc., can often play an important part. But the tendency in many chronic cases is for the mucous engorgement to disappear to a great extent, whereas the damage to the neuromuscular apparatus remains. Under such circumstances it is unreasonable to expect a cure by the ordinary means. On the other hand, improvement may be looked for from such measures of "natural therapy" as produce benefit in similar pathologic conditions elsewhere, e. g., in the form of facial palsy which is the result of exposure to the cold. Hernaman-Johnson says that in treating paresis of laryngeal muscles by faradization, the secret of success lies in the regular and persistent use of mild currents, which are not calculated to produce violent contractions of opposing healthy muscles. If carefully applied for a prolonged period this form of electricity exercises a selective action on the affected structures and eventually restores their tone. Remarkable as are the results in suitable cases, however, it must not be regarded as a panacea for each and every form of catarrhal aphonia. When the laryngoscope shows marked swelling and congestion of the cords, the mucous membrane must be attacked vigorously on orthodox lines. Nevertheless, even when the mucosa is the part most at fault, the judicious use of the interrupted current, he declares, forms a valuable adjunct to routine treatment.

32. **Phlegmasia Alba Dolens.**—Five days after delivery, Curtis's patient developed phlegmasia alba dolens in the left leg. Under treatment she progressed favorably for seven days when she was seized with violent pains in the left chest and shortness of breath. The respirations were 72; pulse, 108, regular, but very feeble; the temperature, 100 F. The extremities were cold. She complained of intense pain over the epigastrium, precordia, and lower axilla. An impaired note was found over the lower part of the axilla, and the breath sounds over this area were badly transmitted; no friction sound was heard. A soft systolic murmur could be heard over the pulmonary area and the second sound was accentuated. She suffered from retching and some vomiting, and the smallest amounts of liquid nourishment caused great pain over the precordia and lower axilla. As the stomach was dilated this was attributed to pressure on the diaphragm, interfering with cardiac and respiratory movements. Hot water bottles were applied to the feet and hot applications to the chest. She was given iced milk and soda-water with brandy in small quantities at frequent intervals. She was also given the following mixture every four hours:

℞		gm. or c.c.	
Bismuth carbonate	gr. x		65
Aromatic spirits of ammonia...............	m. xv	1	
Compound tincture of cardamoms...........	m. x		60
Mucilage, q. s., and water................	℥i	30	

On the following day the vomiting had ceased. The respirations were 66; pulse, 102, and temperature, 101 F. She still had considerable pain over the lower axilla, and a marked friction sound could be heard over this area. It was noticed that the swelling in the left leg had diminished considerably; it was much softer and free from pain. The pulmonary systolic murmur could still be heard, although it was not so marked. Three days later there was a considerably impaired note over the lower half of the upper lobe, and the whole of the lower lobe and axilla, with marked tubular breathing, bronchophony and pectoriloquy. The temperature was 99 F., respiratory rate 60, and pulse 96, regular, and of medium tension. The pulmonary sounds were clear. There was good air entry at the base, but dulness persisted over the axilla, the lower half of the upper lobe, and the upper half of the lower lobe; and over these areas there were still tubular breathing, bronchophony and pectoriloquy. There was still an occasional dry cough but no expectoration. The temperature was normal. The left leg had resumed its normal size. The lung symptoms gradually cleared up.

33. **Influence of Quinin on Phagocytosis.**—Smith made a series of researches to ascertain, if possible, the truth of the statement that quinin, like alcohol in excess, inhibits phagocytosis, and is therefore contraindicated in septic conditions. The opsonic index was taken as a basis for the work, with the additional factor of a solution of quinin and morphia. The very soluble acid hydrochlorid of quinin was selected because it is much less irritating than the sulphate and contains 8 per cent. more quinin. Morphin hydrochlorid, 1/8 grain, was added to each 10 grains of the quinin salt. It was roughly calculated that a 10-grain dose given to a person weighing 140 pounds, if entirely absorbed, would represent in the blood a proportion of 1 to 7,500. The influence of this solution (1 to 7,500, equivalent to a 10-grain dose) on the phagocytosis of different kinds of pathogenic organisms (e. g., streptococci, staphylococci, pneumococci, *B. coli, B. influenzæ, B. pseudodiphtheriæ*, and *B. tuberculosis*) was contrasted with stronger and weaker solutions to ascertain the effect of varying doses. In the majority of the eleven sets of experiments, there was an increased phagocytosis, always most marked with the 10-grain dose solution. Instead of inhibiting phagocytosis, the addition of quinin and morphia, in what may be considered the "ideal" dose, greatly increased it. Smaller doses in all the groups were less effective, and one important fact was clearly demonstrated—namely, that very large doses (30 and 40 grains), instead of increasing, actually diminished phagocytosis, sometimes to the extent of 50 per cent.

Clinical Journal, London

November 2

34 Complications of Gall-Stones. C. H. Fagge.
35 Late Results of Operations on the Stomach. H. J. Paterson.
36 The Appendix in Middle and Later Life. E. M. Corner.

Medical Press and Circular, London

November 2

37 Respiration in Health and Disease. J. F. H. Dally.
38 Specialists and Specialisms and Their Relationships to General Practice. P. S. Abraham.
39 Physical Aspects of Blood-Pressure. T. L. Brunton.
40 Uniformity of Method for Medical Inspection. J. Kerr.

Annales de Gynécologie et d'Obstétrique, Paris

October, XXXVII, No. 9, pp. 577-720

41 *Non-Cystic Ovarian Tumors. M. Mériel.
42 *Stenosis of the Pylorus from Muscular Hypertrophy. P. Fredet and L. Guillemot.
43 *Megacolon. M. Patel.

41. **Non-Cystic Ovarian Tumors.**—Mériel discusses all kinds of ovarian tumors outside of cysts. He has found only seventeen fatalities in the 289 operative cases on record since 1900, the mortality thus being from 4 to 4.5 per cent. The percentage of permanent cures has been 15 per cent. in the 372 cases compiled by Estor between 1881 and 1900 and the proportion is much higher in later series. The figures show that the operative mortality is no higher when both ovaries and the uterus are removed. The final outcome, he states, is much better for these non-cystic ovarian tumors, especially the malignant, than with cancer of other genital organs or organs elsewhere. This favorable prognosis includes both the operative and remote results, and it encourages early operation in case of a solid, movable tumor of the ovary. As there is no reliable sign to differentiate the benign from the malignant tumors, there should be no delay; the abdomen once opened the surgeon can then decide whether to continue or abandon the operation. Bilateral ovariotomy can be done without interrupting a pregnancy; after delivery the ovarian tumor should be removed without delaying for more than two or three days. The favorable figures shown by the latest statistics permit more initiative than in the past. Metzger has compiled 150 cases of ovarian cancer complicating gastric cancer, and Hartmann has reported a case in which he successfully removed a cancer in both ovaries and the primary cancer in the pylorus, the patient, a woman of 38, leaving the hospital in good condition; the operations were done in two sittings with a month's interval. In Boeckel's case two large cancers were removed from the ovaries; necropsy a few months later disclosed an unsuspected cancer in the stomach.

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Bulletin de l'Académie de Médecine, Paris

October 18, LXXIV, No. 32, pp. 197-220

44 *Paralysis of the Recurrent Laryngeal Nerve and Mitral Stenosis. E. Boinet.

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Lyon Chirurgical, Lyons

November, IV, No. 5, pp. 421-512

45 *Spinal Anesthesia in Gynecology. (Etude sur la rachistovainisation.) Violet and Fisher.
46 Operative Treatment in Cholelithiasis. (Du choix de l'intervention dans la lithiase biliaire.) G. Cotte.
47 Traumatic Dislocation of the Scaphoid Bone in the Foot. E. Destot.

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the patients can be fed earlier and convalescence is shortened But the technic requires skill and the method has its indications and contraindications Among the latter are strangulated hernia, dating from several days, septicemia and tuberculosis—in several cases the spinal injection seemed to localize the trouble in the meninges, dyspnea of mechanical origin pregnancy arteriosclerosis, syphilis, tabes or any history of a cerebrospinal affection

Semaine Médicale, Paris

November 2 XXX, No 44 pp 517 528

48 *Herpes of Skin and Mucous Membranes C Fernet

48 **Herpes**—Fernet explains herpes as a specific trophoneurotic affection differentiated by its causes its mode of action and the objective findings The direct immediate cause of herpes is microbian toxi infection, generally due to the pneumococcus Other causes sometimes incriminated are only predisposing Besides zona, the herpes of the face, trunk and limbs, he accepts herpes of the throat, commonly called herpetic angina, and herpes of the lungs, commonly called fibrinous pneumonia Pneumonia is thus, according to his conception, a pneumococcus toxi infection of the pneumogastric nerve and the inner surface of the lung, and he reports and analyzes a number of examples to sustain this view.

Berliner klinische Wochenschrift

October 24 XLVII, No 43 pp 1957 2004

49 *Tuberculosis in Prussia During 1909 (Neuer Statistik zum Kampfe gegen die Tuberkulose) B Frankel
50 *Treatment of Diseased Ovaries and Fallopian Tubes (Wandlungen und Fortschritte in der Behandlung der chronisch entzundlichen und eitrigen Erkrankungen der Gebarmutteranhange) L Landau
51 Semicentennial of the Berlin Medical Society and Pathologic Anatomy D v Hansemann
52 Interstitial Pulmonary Emphysema A Fraenkel
53 *Apparent and Actual *Azoospermia (Zur Wurdigung der Spermabefunde fur die Diagnose der mannlichen Sterilitat)* P W Furbringer
54 *Mishaps with Serotherapy (Zufalle bei der Serumtherapie) G Jochmann
55 Antistreptococcus Serum and Streptococcus Immunity W Zangemeister
56 Experimental Research on Erect Gait (Untersuchungen uber den aufrechten Gang) H Gerhartz
57 *Ehrlich's 606 (Organotrop—Spirillotrop) E Lesser
58 Shape of the Stomach (Die Grundformen des normalen und pathologischen Magens und ihre Entstehung) E Schlesinger
59 The Roentgen Ray in Dermatology (Indication und Methodik der Rontgenbestrahlung der Hautkrankheiten) A Alexander Commenced in No 42
60 Introduction of New Drugs Etc (Ueber die Einfuhrung neuer Arzneimittel und Verwandtes) H Kohn

49 **Progress in the Campaign Against Tuberculosis**—Frankel states that the statistics for Prussia show that the total deaths from tuberculosis in 1909 were 9 11 per cent of the total mortality, against 9 13 per cent in 1908 There has been a constant decline since 1875, when the deaths from tuberculosis totaled 88 283, against 60,871 in 1909, while the population in this period has increased from 28,000,000 to 39,000,000 The number of tuberculous individuals receiving institutional treatment has increased during this period from less than 12 000 to over 102,000, but the institutions for the advanced cases are still shunned as of yore Of the 42,232 tuberculous insured given a course of sanatorium treatment 35 131, that is 83 per cent, regained their earning capacity This regaining of earning capacity persisting for five years and over is recorded for 27 per cent in 1897, and this percentage has increased constantly up to 46 per cent in 1905 Besides the three stages of the Turban classification, the statistics now embrace a stage O, this represents "a more favorable condition than stage I"

50 **Diseased Adnexa**—Landau reviews the changes and progress realized in the treatment of chronic inflammation or suppuration in the uterine adnexa, and cites his own experience His figures seem to sustain his views in regard to the advantages of abdominal operating for uncomplicated affections of the adnexa, unilateral or bilateral, while the radical vaginal route is reserved for the cases with complications, preferably the abdominovaginal technic The mortality in his 780 abdominal operations was 2 per cent , by the vaginal route alone, the mortality was 4 2 per cent. in 543 cases of chronic suppuration or inflammation since 1893, while it was 7 6 per cent in ninety two cases with complicating pelvic abscess Prophylaxis of adnexitis includes *prevention or early cure* of gonorrhea and of sepsis after abortion and childbirth, and efforts to ensure asepsis in minor gynecologic measures, curetting, etc

53 **Apparent or Actual Azoospermia**—Furbringer warns physicians *not to be too hasty in concluding* as to the existence of azoospermia, a second examination may give opposite findings from the first He has encountered about a thousand cases of actual azoospermia and also numerous cases in which he had to reverse the first diagnosis The lack of motility is the essential element for the diagnosis The movements of the spermatozoa may be impeded by coagulation of the medium but they regain their motility, if normal, as the medium is liquefied by heat or otherwise Hot weather and extreme cold may also affect the motility of normal spermatozoa, as may also the presence of an antiseptic or indifferent powder. In many cases of assumed sterility in the husband some gynecologic trouble in the wife was finally discovered, notwithstanding the assurance of the gynecologists to the contrary at first

54 **Mishaps and Hypersusceptibility with Serotherapy**—Jochmann has had only two cases of threatening collapse in his extensive experience with serotherapy in various diseases, these were both after intravenous injection of large amounts of antistreptococcus serum in scarlet fever An existing heart disease in one case showed signs of aggravation after an intravenous injection of 50 c c of antistreptococcus serum, and he now regards heart disease as contraindicating the intravenous route He urges the production of more concentrated serums, as the untoward effects are observed with the larger doses, and further pleads that other animals besides horses should be utilized in making the serums—mules, goats, asses and cows—so that by interchanging the serums in cases requiring repetition of the doses it may be possible to avoid all danger of hypersusceptibility Netter has reported that manifestations of serum sickness have been reduced from 20 to 3 or 4 per cent in his experience with 600 cases since he has made it a routine practice to inject or give by the mouth from 0 75 to 1 gm (from 12 to 15 grains) of calcium chlorid for three days in succession

57 **Ehrlich's "606"**—Lesser here states that this preparation exerts the same action as arsenic in other forms in other diseases as well as in syphilis, only in a much simpler, speedier and more energetic manner The general condition improves, the patients regain appetite and their pallor yields to the tint of comparative health This organotropic effect, as he calls it, is also the main factor, in his opinion, in its efficacy in syphilis, as it reinforces the natural defensive processes He doubts whether the direct destructive action of the new remedy on the spirochetes in the body is the principal factor in the cure of syphilis The dosage should be selected with the aim to influence the natural defensive processes and increase the vitality of the cells without reference to any direct destructive action on the spirochetes It has been his impression from his observation that the symptoms and the transformation of the Wassermann reaction are not influenced any more by large than by moderate doses If the reaction is still positive six or eight weeks after the first injection it might be advisable to repeat the dose A negative reaction seems to indicate, he thinks, at least a temporary inactivity on the part of the spirochetes

Centralblatt fur die Grenzgebiete der Med und Chir, Jena

October 5, XIII No 17 pp 641 688

61 *Non Operative Treatment of Cancer (Bakterio und Serotherapie des Carcinoms Die Anasthesie und Saugtherapie) E Venus Commenced in No 15

October 15, No 18, pp 689 720

62 The Sensibility of Internal Organs A Neumann Commenced in No 11

October 31, No 19, pp 721 768

63 *Typhoid Suppuration in the Kidneys (Die suppurativen Nierenkomplikationen des Typhus abdominalis mit bes Berucksichtigung ihrer chirurgischen Bedeutung) E Melchior Commenced in No 18

61 **Non-Operative Treatment of Cancer.**—Venus lists 367 articles on the treatment of cancer with serotherapy, anes

thetics or suction. It is possible that a specific serum may yet be produced, but the results to date, he says, have been disappointing. The best results have been obtained with the epithelium serum, based on cytotoxic action, and further research is indicated in this line. Serotherapy with streptococcus or mixed cultures has proved ineffectual, although in inoperable sarcoma or after operation, Coley's fluid might be given a trial. No benefit seems to have been obtained with injection of local anesthetics, which Spiess and Schleich have tried. Ritter has applied suction hyperemia, but his silence since his last favorable announcement, three years ago, does not speak very favorably for the method.

63. **Typhoid Suppuration of the Kidney.**—Melchior has compiled fifty-six reports or discussions of suppurative complications on the part of the kidneys with typhoid, with special regard to their surgical treatment, discussing in turn abscesses, pyelonephritis, pyonephrosis and abscess formation in the tissues around the kidney, as well as typhoid infection of hydronephrosis and of a kidney containing concrements. Among the numerous cases described are some which show the possibility of long latency before serious local symptoms develop, ten years in Meyer's and six years in Greaves' case. In both, however, careful examination would probably have revealed the suppuration long before, while with typhoid bone abscess the interval may be absolutely free from symptoms. Post-typhoid pyuria should always be regarded as a serious symptom, and the source for the pus should be determined so that proper treatment can be applied at once. Typhoid suppuration seems to be rather benign in nature; in Greaves' case the typhoid pyonephrosis healed under mere drainage without a fistula. Nephrectomy should be considered with pyonephrosis destroying the organ, and also with destruction from suppuration with kidney stone. The patients with these post-typhoid complications are generally chronic bacilli-carriers.

Deutsche medizinische Wochenschrift, Berlin

October 27, XXXVI, No. 43, pp. 1985-2032

64 Treatment of Morphin Addiction. L. W. Weber.
65 Chloroform-Antiformin Technic for Staining Tubercle Bacilli. (Neues Anreicherungsverfahren zum färberischen Nachweise spärlicher Tuberkelbazillen.) F. Loeffler.
66 Hay-Fever. (Zur Behandlung des Heufiebers.) W. Ebstein.
67 Influence of Ehrlich's "606" on the Wassermann Reaction. F. Munk.
68 *Functional Tests of the Pancreas. M. Hirschberg.
69 Meiostagmin Reaction in Foot-and-Mouth Disease. (Meiostagminreaktion bei der Maul- und Klauenseuche.) A. Ascoli.
70 Anatomic Reciprocity of Organs with an Internal Secretion. S. Wideröe.
71 *Influence of Creeping Exercises on Orthostatic Albuminuria. (Einfluss der Kriechübungen auf die lordotische Albuminurie.) G. Pechowitsch.
72 Corneal Lesions in Exophthalmic Goiter. (Erkrankungen der Hornhaut bei Morbus Basedowii mit Exophthalmus.) A. v. Poppen.
73 Treatment of Itching Dermatoses with Hot-Air Douche. (Behandlung juckender Dermatosen mit warmer bewegter Luft.) W. H. Dreuw.

68. **Functional Tests of the Pancreas.**—Hirschberg reports the details of six cases in which the combination of the various functional tests of the pancreas gave instructive findings. They are more reliable in the chronic cases. In acute pancreatitis, Wohlgemuth's method of determining the diastase in the urine, he states, is a valuable aid in diagnosis. It was described in THE JOURNAL, March 5, 1910, page 825.

71. **Creeping Exercises and Orthostatic Albuminuria.**—Pechowitsch says that the experiences at Bier's clinic with Klapp's creeping exercises have confirmed the fact that orthostatic albuminuria is the result of an exaggerated lordosis of the lumbar spine, mechanically obstructing the venous outflow from the kidneys. The creeping exercises improve conditions in the circulation by their favorable action on the general health as well as on the local condition.

Medizinische Klinik, Berlin

October 30, VI, No. 44, pp. 1727-1766 and Supplement

74 Pathology of Suppurative Kidney Disease. (Nierenerkrankungen.) L. Jores.
75 *Abdominal Contusions. (Ueber subkutane Bauchverletzungen.) O. Föderl. Commenced in No. 42.
76 *Physical Examination Before and After Sanatorium Treatment of Pulmonary Tuberculosis. E. Rumpf.
77 Requisites for Radical Roentgen-Ray Treatment. L. Freund.
78 *Connection Between Syphilis and Pernicious Anemia. O. Roth.
79 *Organotherapy of Postoperative Parathyreopriva Tetany. E. Bircher.
80 Epidemic of Poliomyelitis in Austria in 1909. G. Stiefler.
81 Radioactivity of Air and Soil. A. Gockel.
82 Disputed Cases in Regard to Workmen's Compensation, Etc. (Die wichtigeren Entscheidungen des Reichs-Versicherungs-Amts aus den Jahren, 1905-1909.) E. Franck.

75. **Abdominal Contusions.**—Föderl concludes his long study of this subject by warning that any contusion of the abdomen is liable to induce symptoms of shock. It is impossible to determine the extent of the internal injury from the presence or the intensity of the shock or the total absence of signs of shock. He has had patients with severe laceration of the liver or rupture of the bowel who were able to repair to the hospital on foot. Subnormal temperature may be due to the shock and anemia; fever soon after the trauma shows an inflammatory process. The pulse and heart action are not influenced by internal injury except in case of anemia or peritonitis. Nausea and vomiting do not necessarily accompany anatomic injury. With extensive hemorrhage or peritonitis, the decision to operate generally comes too late; the operation is designed to forestall these. Sedatives mask the clinical picture and obscure the diagnosis and indications for treatment. Lack of active initiative on the part of the general practitioner is particularly serious in cases of abdominal contusions. These patients require specialist oversight at the earliest possible moment.

76. **Physical Examination Before and After Sanatorium Treatment of Tuberculosis.**—Rumpf's article was read before the last annual meeting of German sanatorium physicians; he emphasizes the importance of the physical findings and the sources of error. The findings are more instructive, he says, if the patient breathes through the mouth. He discusses in detail the question as to whether the changes in the lungs are due to tuberculous infection or not. It is a great gain when the râles can be completely banished during the course of treatment and no crepitation is heard even after coughing. The infectious process is much more liable to spread from a focus with liquefaction. He found 79 per cent. of the patients with full earning capacity after several years of those patients who lost their râles entirely during treatment; 1.5 per cent. had died. Among those in whom the râles were not entirely abolished, only 31 per cent. were found with full earning capacity, and 42 per cent. had died. The importance of distinguishing between the various types of râles is shown by the late findings in his cases: full earning capacity in 74 per cent., and 4 per cent. had died of those patients with nonsonorous râles, while only 22 per cent. had full earning capacity, and 57 per cent. had died of those with tinkling râles. The latter always indicate destruction of tissue; it is not necessary to wait for the pronounced metallic tinkling râles to reveal tissue destruction. His experience has demonstrated that the length of time required to banish the râles varies widely in different patients. The aim should be to prolong the sanatorium treatment until this is realized for as large a proportion of patients as possible.

78. **Connection Between Syphilis and Pernicious Anemia.**—In Roth's case, the young woman made rapid progress under mercurial treatment and the blood findings returned to normal in the course of three or four months, although the Wassermann reaction was still positive.

79. **Organotherapy and Postoperative Tetany.**—Bircher writes from Aarau that he has operated in 1,400 cases of goiter during the last sixteen years without postoperative tetany in any instance, but lately two cases developed in the course of a month, one in a woman of 55 and the other in a girl of 18. In both cases the tetany was evidently due to loss of parathyroid substance, and the tendency to tetany was promptly cured by parathyroid treatment. This experience, he asserts, shows the possibility of curing tetany by this simple means. It also demonstrates that it is not always possible to refrain from removing the parathyroids in operating on the thyroid. Thyroid treatment has never given any results in this form of postoperative tetany; in the two cases reported it was given first and without effect. This rendered more striking in both the cases the prompt efficacy of the parathyroid treatment. It is possible that the remaining parathyroids might

have developed a compensating hypertrophy in time, but in the meanwhile there was danger of the patients succumbing to the severe manifestations.

Münchener medizinische Wochenschrift

October 25, LVII, No. 43, pp. 2217-2272

83 *Delivery with Contracted Pelvis. (Die kausale Behandlung einer Dystokie bei engen Becken.) O. v. Herff.
84 *Apparatus to Induce Artificial Respiration. (Zur praktische Anwendung der instrumentellen künstlichen Respiration am Menschen.) G. A. Läwen and R. T. Sievers.
85 Orthodiagraphy of the Apex of the Heart. W. Achelis.
86 The Hot-Air Douche in Gynecology. (Die Heissluftdusche) E. Krösing.
87 Operative Treatment of Inflammation of the Ovaries and Fallopian Tubes (Zur operativen Behandlung entzündlicher Adnexerkrankungen.) C. Weinbrenner.
88 Medicated Tampons in Gynecology. M. Schwab.
89 Ehrlich's "606" in Syphilis. H. Ritter.
90 Roentgen Rays in Dermatology. (Anwendung der Röntgenstrahlen in der Therapie der Hautkrankheiten.) M. Löwenberg
91 Roentgen-Ray Treatment in Scleroma. K. Bohac.
92 Visual Anomaly in Left-Handed Individuals. (Augensymptom bei Linkshändern) E. Enslin.
93 Infant Hygiene in Rural Districts. (Säuglingsfürsorge auf dem Lande.) Eidam.

83. **Contracted Pelvis.**—It has been v. Herff's experience at Basel that conservative measures give as good if not better ultimate results than have been reported from any clinic with the recently introduced operative technics in management of delivery with contracted pelvis. In the 10,289 births in the last seven years contracted pelvis was encountered in 13.8 per cent.; the maternal mortality was 0.4 per cent. and the mortality of the children 7.3 per cent. The main reliance is on artificial premature delivery which was completed spontaneously in 86 per cent.; there was no mortality for which the management of the birth could be incriminated. Operative treatment exposes the mother to grave danger at the time and possibility of later impairment of her working capacity. He argues that the survival and health of the mother of the family far outweigh the consideration for the life of the infant in cases of contracted pelvis, as a rule. The aim should be to reduce infant mortality during the first year or two of life rather than to sacrifice the mothers to bring a few more infants into the world by Cesarean section or pubiotomy. Comparison of his figures with those of Döderlein's clinic, where operative measures are more frequently applied, shows that the final outcome is much better. No permanent injury resulted for the mother from high forceps in his experience, while with pubiotomy from 32 to 50 per cent. of the women have been left with permanent injury according to the reports published by four leading obstetricians (Schläfle, Zweifel, Bumm and Leopold).

84. **Instrumental Artificial Respiration.**—Läwen and Sievers report a case in which the symptoms indicated a brain tumor and respiration suddenly ceased completely. The respiration was kept up by the usual maneuvers for an hour, the pulse being still full. The patient was entirely unconscious, the pupils were dilated and the reflexes were abolished. An opening was then made into the trachea, a cannula introduced and connected with an apparatus which pumped air regularly into the lungs for nine hours, keeping up the heart action while the blood-pressure ranged from 40 to 95 mm. mercury. Necropsy revealed internal hydrocephalus and hemorrhage into the ventricle shutting off all the cerebral functioning and flattening the medulla oblongata. Notwithstanding this serious condition, the instrumental artificial respiration kept the heart beating for nine hours. The great drawback to the method is the necessity for tracheotomy. An illustrated description is given of the apparatus used here for the first time on man, although it had long proved its usefulness for animals.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 25, XXXI, No. 128, pp. 1353-1360

94 Conservative Cesarean Section for Severe Eclampsia. A. Montini.

October 27, No. 129, pp. 1361-1368

95 Action of Extracts of Feces on Development of Certain Micro-Organisms. M. V. Carletti.

Policlinico, Rome

October 30, XVII, No. 44, pp. 1379-1410

96 Melostagmin Reaction in Tuberculosis in Children. A. Filia.

Riforma Medica, Naples

October 24, XXV, No. 43, pp. 1177-1204

97 Influenzal Skin Lesions. G. Ghedini.
98 *The Blood Serum in Malignant Disease. A. Vecchi. Commenced in No. 42.

98. **The Blood Serum in Cancer.**—Vecchi has been studying the serum from patients with cancer, especially the refraction index, Rivalta's test and the antitryptic power of the serum, comparing the findings with the serum of thirty-six patients with various non-malignant surgical affections. None of the findings seems to have much differential value for the diagnosis of incipient cancer.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

THE MICROSCOPICAL EXAMINATION OF FOODS AND DRUGS. A Practical Introduction to the Methods Adopted, in the Microscopical Examination of Foods and Drugs, in the Entire, Crushed and Powdered States. By Henry G. Greenish, F.I.C., Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain. Second Edition. Cloth. Price, $3 net. Pp. 386, with 209 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

AN ANATOMICAL AND SURGICAL STUDY OF FRACTURES OF THE LOWER END OF THE HUMERUS. By Astley Paston Cooper Ashhurst, M.D., Prosector of Applied Anatomy in the University of Pennsylvania. The Samuel D. Gross Prize Essay of the Philadelphia Academy of Surgery, 1910. Cloth. Price, $2.75 net. Pp. 163, with 150 illustrations. Philadelphia: Lea & Febiger, 1910.

PROCEEDINGS OF THE TENNESSEE PHARMACEUTICAL ASSOCIATION. At Its Twenty-Fifth Annual Meeting held at Memphis (Gayoso Hotel), July 19-21, 1910. With Lists of Officers, Committees and Roll of Members. And Annual *Report of the Tennessee Board of* Pharmacy with Lists of Registered Pharmacists. Paper. Pp. 168. E. F. Trolinger, Secretary, Nashville, Tenn., 1910.

STATE BOARD EXAMINATION QUESTIONS AND ANSWERS OF FORTY-ONE STATES AND TWO CANADIAN PROVINCES. A Practical Work, Giving Authentic Questions and Authoritative Answers that Will Prove Helpful in Passing State Board Examinations. Third Edition. Cloth. Price, $3 net. Pp. 819. New York: William Wood & Co., 1910.

A STUDY OF MELTING-POINT DETERMINATIONS. With Special Reference to the Melting-Point Requirements of the U. S. Pharmacopeia. By George A. Menge. Hygienic Laboratory. Bull. No. 70. P. H. and M.-H. S. of the United States. Paper. Pp. 101, with 20 illustrations. Washington: Government Printing Office, 1910.

THE PHYSIOLOGY OF REPRODUCTION. By Francis H. A. Marshall, M.A., Fellow of Christ's College, Cambridge. With a Preface by Prof. E. A. Schäfer, F.R.S., and Contributions by William Cramer, Ph.D., and James Lochhead, M.D. Cloth. Price, $6. Pp. 706, with illustrations. New York: Longmans, Green & Co., 1910.

TRANSACTIONS OF THE SIXTEENTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY. Held in Washington, D. C., April 28-30, 1910. Cloth. Pp. 444, with illustrations. [Thomas J. Harris, M.D., Secretary, 117 E. Fortieth Street, New York, 1910.]

FOOD AND FEEDING IN HEALTH AND DISEASE. A Manual of Practical Dietetics. By Chalmers Watson, M.D., Assistant Physician, Royal Infirmary, Edinburgh. Cloth. Price, 10 shillings 6 pence. Pp. 638, with illustrations. Edinburgh: Oliver and Boyd, Tweeddale Court, 1910.

A MANUAL OF NURSING. By Margaret Frances Donahoe, Formerly Superintendent of Nurses and Principal of Training School, Philadelphia General Hospital. Cloth. Price, $2 net. Pp. 489, with 52 illustrations. New York: D. Appleton & Co., 1910.

HEREDITARY CHARACTERS AND THEIR MODES OF TRANSMISSION. By Charles E. Walker, M.Sc., Director of Research in the Glasgow Cancer Hospital. Cloth. Price, $2.40. Pp. 239, with 21 illustrations. New York: Longmans, Green & Co., 1910.

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN. By Harry S. Crossen, M.D., Professor of Clinical Gynecology, Washington University. Second Edition. Cloth. Price, $6. Pp. 1025, with 744 illustrations. St. Louis: C. V. Mosby Co., 1910.

WALSH'S PHYSICIANS' HANDY LEDGER. A Companion to Walsh's Physicians' Combined Call-Book and Tablet. Half Leather. Price, $3.50. Pp. 600. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

PRAKTISCHE KINDERHEILKUNDE IN 36 VORLESUNGEN FÜR STUDIERENDE UND AERZTE. Von Dr. M. Kassowitz in Wien. Paper. Price, 18 marks. Pp. 653, with illustrations. Berlin: Julius Springer, 1910.

URINARY SURGERY. A Review. By Frank Kidd, F.R.C.S., Assistant Surgeon to the London Hospital. Cloth. Price, $2.60. Pp. 429, with illustrations. New York: Longmans, Green & Co., 1910.

WALSH'S PHYSICIANS' COMBINED CALL-BOOK AND TABLET. Flexible Leather, with Flap and Pocket. Price, $1.50. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION. For the Year 1910. Volume XXVI. Cloth. Pp. 235. G. Hinsdale, M.D., Secretary, Hot Springs, Va., 1910.

ANDREAS VESALIUS, THE REFORMER OF ANATOMY. By James Moores Ball, M.D. Paper. Price, $5. Pp. 149, with illustrations. St. Louis: Medical Science Press, 1910.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LV, No. 24 CHICAGO, ILLINOIS DECEMBER 10, 1910

THE USE OF TYPHOID VACCINES IN TYPHOID FEVER*

JAMES M. ANDERS, M.D., LL.D.
Professor of Medicine and Clinical Medicine in the Medico-Chirurgical College
PHILADELPHIA

The vaccine treatment of typhoid fever has been tested in recent years by a number of clinicians with varying results. Fraenkel[1] was the first to call attention to the subject of the treatment of this disease by vaccine therapy. Since the commencement of the year 1909, a considerable number of other writers have reported individual experiences of the use of typhoid vaccines as a means of cure. While the medical profession is not, in any marked degree, enthusiastic in regard to the question, every new remedy or method of treatment that rests on a reasonably secure, scientific basis deserves an extended trial before it is rejected. Certain fundamental principles and facts, which are generally accepted by laboratory experts, should be understood also by the clinician who intends to use vaccines in the treatment of typhoid fever and other diseases. Among these are:

1. The object of vaccine therapy is to induce an active immunity by introducing an added amount of morbific material, so that "by manufacturing an increased amount of the protective bodies, it (the body of the vaccinated person) shall inhibit the growth of the invading organisms, and cut short the disease."[2]

2. When the *Bacillus typhosus* undergoes solution in the human organism, endotoxin, to which its pathogenic action is wholly attributable, is set free.

3. In the process of immunization, both bacteriolysis and phagocytosis play a part. Emery[3] rightly holds that phagocytosis is of chief importance from the fact that typhoid bacilli liberate their endotoxin when dissolved by means of bacteriolytic serums.

4. In serious types in which the system is already overwhelmed with the typhoid bacillus and its toxins, it is unwise to employ the vaccine treatment, for it may be a source of fresh danger. Under these circumstances, there can be no response to attempts at stimulating the production of immunizing substances by the introduction into the system of more of the specific poison. On the contrary, there must occur an aggravation of the symptoms.

5. When typhoid fever is being treated with vaccines the determination of the opsonic index in routine private practice is too time-consuming a procedure to be adopted, although desirable, when it can be carried out, in hospital work. Fortunately, it is generally conceded to be unnecessary to estimate the opsonic index, if the effect of the treatment on the general clinical symptoms be closely observed.

6. Typhoid fever is an acute bacteriemia plus toxemia, often fulminating in character, and not a localized infection; hence, brilliant results from the vaccine treatment for the cure of this disease are scarcely to be expected.

It may be questioned seriously whether, on account of the foregoing facts, it is not injudicious to practice vaccine therapy in the severer and so-called malignant types of typhoid fever. In this connection, it should be recollected that chronic infections in which the specific organism is, more or less, completely walled off from the general circulation, with slow absorption of toxins into the blood are those in which the vaccine therapy gives its best results. Here, the production of antibodies can be stimulated "by the introduction of dead bacilli into the general circulation, and these can effectually exercise their therapeutic properties on the bacteria in a chronic lesion" (Swan).

A considerable number of clinical observers have been impressed with the curative or controlling influence of proper inoculations with appropriate bacterial vaccines in typhoid fever. One of the earliest observers, Captain Smallman,[4] employed the method in thirty-six cases with three deaths or a percentage of 8.3. He remarks especially on the absence of prolonged cases, of complications, of sequelæ and of relapses; and, further, that a local infection during convalescence, for example, periostitis of the tibia, can be dissipated by the local injection of vaccines. From an observation of forty cases, Watters and Eaton[5] suggest that the early administration of typhoid vaccine appears to shorten, in many cases, the duration of the disease and to cause the affection to run a mild course. Semple[6] treated nine cases, six of which showed well-marked improvement after the inoculations, especially two cases treated with autogenous vaccines. In the remaining three, amelioration of the symptoms occurred.

On the other hand, certain writers, who have had much experience of the use of vaccines in the treatment of typhoid fever, declare that the results are not especially striking, while others have found them to be practically negative. For example, J. B. Nichols[7] tried the inoculation method in the Freedmen's Hospital, but "no effect on the clinical conditions, in the way of either improvement or aggravation of the symptoms, was definitely demonstrable." Richardson[2] reported the results of the method in twenty-five cases of typhoid fever without encouraging effects. He, however, asserts that the influence of inoculation is favorable in preventing, in large measure at least, typhoid relapses when its use is continued during the period of convalescence. Emery[8] remarks that the curative treatment of typhoid fever by vaccine therapy is not satisfactory and is still on trial, although he admits that promising results have been obtained by some observers.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Fraenkel: Deutsch. med. Wchnschr., Oct. 12, 1893.

[2] Richardson, M. W.: Vaccine Therapy; General Principles, THE JOURNAL A. M. A., Jan. 22, 1910, p. 255.

[3] Emery: Immunity and Specific Therapy, p. 389.

[4] Smallman: Jour. Roy. Army Med. Corps, London, 1909, xii, 136.

[5] Watters and Eaton: Boston Med. and Surg. Jour., April 22, 1909.

[6] Semple: Lancet, London, 1909, ii, 1668.

[7] Nichols, J. B.: Washington Med. Ann., November, 1909, p. 293.

In eight cases, reported in this paper, small doses of vaccine were employed, namely, initial doses of 25 millions, and subsequent ones of 50 millions each. These were repeated at intervals of seventy-two hours, as a rule. According to some writers, a safe and useful initial dose is 300 to 350 millions of organisms; this sometimes produces a reactionary rise of temperature to 105 F. In my view, massive doses should not be employed in the milder forms of typhoid fever for the reasons previously adduced.

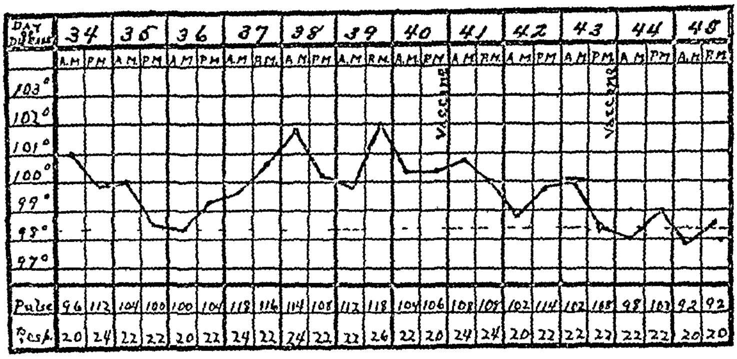

Fig. 1.—Temperature chart, case of B. M., illustrating effect of vaccine treatment in typhoid fever.

In my series of eight cases, in all save one of which the Widal reaction was present, a reactionary fever did not occur; but in two instances (Charts 1 and 2), the nocturnal remissions of temperature became distinctly greater immediately after the use of the vaccines, and in one instance of protracted subfebrile temperature due to typhoid fever, it would seem that they were sufficiently powerful to cause a gradual decline of temperature to the normal in the course of several days. In a case of prolonged and exhausting illness, the patient apparently making no progress toward recovery, Ramsburgh, on the advice of Nichols, used a vaccine with definitely favorable results. Ruffin[9] has reported a case of typhoid fever with prolonged course, in which the injection of 800 million bacilli produced a sharp febrile reaction, followed by subsidence of the pyrexia. In one of my cases a relapse occurred.

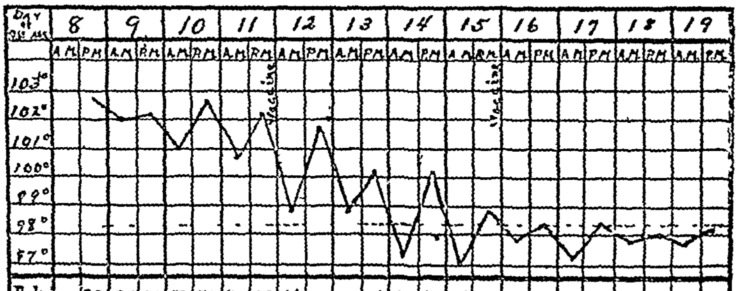

Fig. 2.—Temperature chart, case of L. W., illustrating effect of vaccine treatment in typhoid fever.

A blood examination in my series of cases before injection of vaccines and another twenty-four hours thereafter gave an average result, as shown in the accompanying table.

In view of the fact that phagocytosis most probably plays a principal rôle in Nature's method of curing typhoid fever, the question of the effect of vaccines on the leukocyte count should not be ignored. I am not aware that this aspect of the subject has been investigated hitherto, but it seems to me to be one quite worthy of further consideration. It is clear, if the foregoing premises be correct, that an increased production of polynuclear leukocytes must stimulate, to a corresponding extent, the phagocytosis of the intruding organisms of this disease. But though my own observations, which are too few to warrant generalization, show that small doses of vaccines do not, to any appreciable degree, stimulate phagocytosis during typhoid fever, it is desirable also, to note effect of larger doses.

Finally, it must be conceded that in the complicated process of active immunization, other, although doubtless minor, factors enter. For example, Nuttal and other observers found that "bacteria underwent changes indicative of death and destruction before they were taken up by the phagocytes" (Emery). It will not be denied that serum is an aid to phagocytosis by its action on the bacteria; hence opsonins are believed to be specific antibodies.

Granted that active immunity in typhoid fever is brought about mainly by an increase in opsonins circulating in the blood, it must be recollected, as pointed out above, that bacteriolytic antibodies set free the endotoxin of the typhoid bacilli, and hence may be a source of added danger. Under these circumstances, bacteriolytic serums can scarcely be regarded as Nature's means of establishing immunity.

If, however, as before stated, the process of immunization is dependent chiefly on phagocytosis, and if it be shown that the vaccines stimulate the bone marrow to an increased production of leukocytes, and, through chemotaxis, also, cause an increased output of these cells, then vaccine therapy is to be advised and encouraged.

The mobilized defensive forces in a case of typhoid fever, however, would seem to center about phagocytosis. In this connection, the fact that leukopenia exists in

TABLE OF BLOOD EXAMINATION

	Case 1		Case 2		Case 3	
	Before	After	Before	After	Before	After
Leukocytes	6 400	7 200	9 600	7 000	6 800	6 800
Polynuclear	54.0	51.0	58.0	61.0	60.0	62.0
Small lymphocytes	26.0	28.0	28.0	34.0	24.0	18.0
Large lymphocytes	14.0	15.0	9.0	3.0	11.0	18.0
Transitional	3.5	3.0	4.0	2.0	2.0	
Eosinophils	1.5	2.0	1.0			..

	Case 4		Case 5		Case 6	
	Before	After	Before	After	Before	After
Leukocytes	8 000	9 200	5 600	5 940	7 360	7 840
Polynuclear	69.5	70.1	71.5	64.2	72.0	68.4
Mononuclear	2.0	1.0	3.0	2.0	2.0	3.0
Transitional	2.0	2.0	1.0	3.1	1.0	3.0
Lymphocytes	26.5	26.9	24.5	30.7	25.0	25.6

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[8] Emery: Immunity and Specific Therapy, pp. 390-391.
[9] Ruffin: Washington Med. Ann., 1909, viii, 77.

uncomplicated typhoid fever is to be recollected. At all events, in view of the foregoing facts, the use of vaccines in the treatment of this disease should be somewhat restricted according to conditions and indications presented by individual cases. Their routine use, however, is not to be encouraged, but it is obvious that an anti-endotoxin serum would, by neutralizing the soluble endotoxins, constitute the ideal method of treating typhoid fever. Such a serum has been prepared by MacFadyen, and favorable results have already been reported from its use, when administered early in typhoid cases. It is not improbable that the vaccine treatment of typhoid fever, except as indicated below, will give place to the method of establishing passive immunity by means of an anti-endotoxin. In view of the marked discrepancy among clinical observers as to the size and repetition of the doses, there would seem to be great necessity for an especial consideration of these aspects of the question of therapeutic inoculations in the future.

Vaccine therapy in the treatment of typhoid fever, however, should receive a more extended trial than hitherto, more particularly in the earlier stages of mild types of the disease, before being rejected. Finally, in the present state of our knowledge, the value of vaccines for the following purposes must be conceded: (1) as a means of prophylaxis; (2) in suitable cases when continued during convalescence, to prevent relapses; (3) to combat local infections with the typhoid bacillus, as for example, bone suppurations which arise in the period of convalescence, and (4) for the removal of the typhoid bacilli from the feces and urine in the case of typhoid-carriers.[10]

I desire to express my thanks to Dr. A. A. Stevens, who at my suggestion, treated three of the cases reported above with the results of blood examinations before and after the inoculations, in the wards of the Protestant Episcopal Hospital of Philadelphia, and to Dr. Robert B. Walker for furnishing one of the cases belonging to my series from the Philadelphia Hospital.

1605 Walnut Street.

THE FUNDAMENTAL PRINCIPLES UNDERLYING THE TREATMENT OF WOUNDS ON THE BODY SURFACE

CHAUNCEY E. TENNANT, M.D.
DENVER

Steadily through the maze of a multiplicity of methods, there has crystallized the present treatment of surface traumatic lesions. Based on the knowledge of definite pathologic and histologic processes and confirmed by the shorter periods of disability and lessened distortion of function, modern treatment of surface injuries may be reduced to two fundamental principles: *moist hyperemia* and *the open-air treatment;* in other words, the use of a dressing capable of giving sustained heat and moisture, or one so constructed that it will not displace the protective covering of coagulated serum, yet will protect the wound from further damage.

The wide latitude of pathologic possibilities in surface lesions, varying as they do from a microscopic skin puncture attended with violent constitutional toxemia and death, on the one hand, to extensive abrasions and lacerations with no constitutional manifestations on the other, has, in a measure, justified any course which has had as its result a satisfactory functional termination.

Until recently, little thought was given to the individual factor of lowered bacterial resistance, or the influence of the general state of nutrition on cell-regeneration. But now, with the more careful and detailed consideration of the possibilities of lowered resistance and cell nutrition, there has been a stimulus for the introduction of methods calculated either to intensify locally, or to increase, the number of antibactericidal bodies at the various parts of the organism where needed, or to engorge the tissues with nutritive plasma for the revitalization of the traumatized cell.

Surface lesions of the body widely differ in character, as burns, incised or crushing wounds, etc., and they may also vary from the small pin-point puncture to the extensive loss of continuity which is limited only by the size and force of the destructive agent. But so far as the end-results are concerned, the only difference is their type and degree of infection. Therefore the plan of treatment must be early outlined, if the most successful results are to be obtained. It is well known that in burns, skin-grafts and other superficial traumas which remain sterile, the dry method of treatment gives the most satisfactory results both as to convalescence and function, while the moist hyperemia is the treatment especially adapted to infected wounds, where the organism has lodged itself in the subcutaneous tissues and lymphatics.

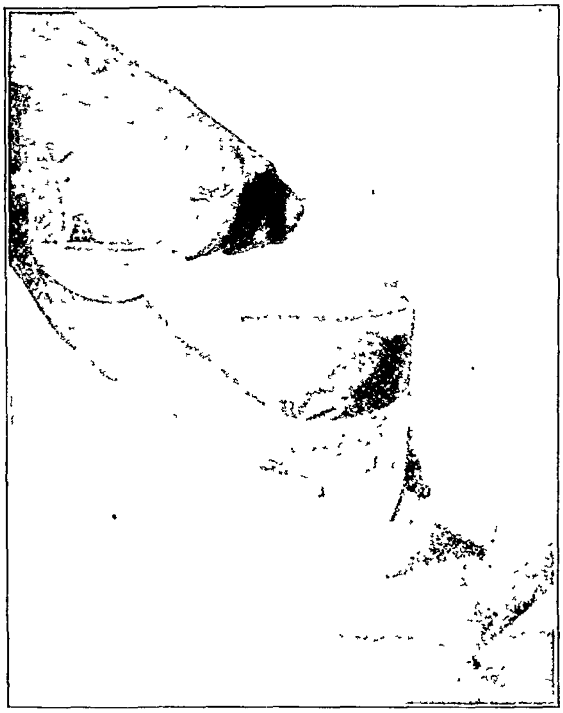

Fig. 1.—Method of applying large and copious wet dressings.

As a rule, the infection is either of the staphylococcic or streptococcic type; the former invariably localizes in a small area, while the latter is most likely to lodge in the subcutaneous tissues and extend rapidly along the lymphatics. Where resistance is fair and early excited, the chemotactic disturbance is quickly manifested with temperature and other clinical phenomena of inflammation. In either type of infection, it is extremely imporof the method in twenty-five cases of typhoid fever without encouraging effects. He, however, asserts that the influence of inoculation is favorable in preventing, in large measure at least, typhoid relapses when its use is continued during the period of convalescence. Emery[8] remarks that the curative treatment of typhoid fever by vaccine therapy is not satisfactory and is still on trial, although he admits that promising results have been obtained by some observers.

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[10] Irwin, S. T., and Houston, T.: Lancet, London, Jan. 30, 1909, p. 311.

In eight cases, reported in this paper, small doses of vaccine were employed, namely, initial doses of 25 millions, and subsequent ones of 50 millions each. These were repeated at intervals of seventy-two hours, as a rule. According to some writers, a safe and useful initial dose is 300 to 350 millions of organisms; this sometimes produces a reactionary rise of temperature to 105 F. In my view, massive doses should not be employed in the milder forms of typhoid fever for the reasons previously adduced.

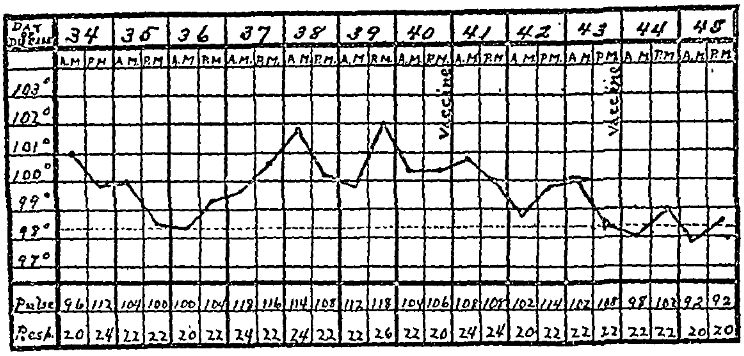

Fig. 1.—Temperature chart, case of B. M., illustrating effect of vaccine treatment in typhoid fever.

In my series of eight cases, in all save one of which the Widal reaction was present, a reactionary fever did not occur, but in two instances (Charts 1 and 2), the nocturnal remissions of temperature became distinctly greater immediately after the use of the vaccines, and in one instance of protracted subfebrile temperature due to typhoid fever, it would seem that they were sufficiently powerful to cause a gradual decline of temperature to the normal in the course of several days. In a case of prolonged and exhausting illness, the patient apparently making no progress toward recovery, Ramsburgh, on the advice of Nichols, used a vaccine with definitely favorable results. Ruffin[9] has reported a case of typhoid fever with prolonged course, in which the injection of 800 million bacilli produced a sharp febrile reaction, followed by subsidence of the pyrexia. In one of my cases a relapse occurred.

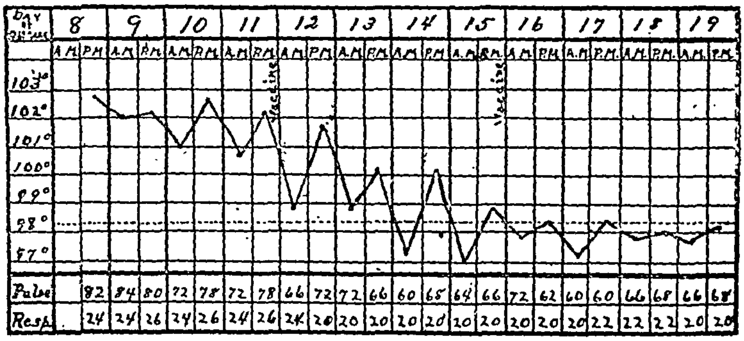

Fig. 2.—Temperature chart, case of L. W., illustrating effect of vaccine treatment in typhoid fever.

A blood examination in my series of cases before injection of vaccines and another twenty-four hours thereafter, gave an average result, as shown in the accompanying table.

TABLE OF BLOOD EXAMINATION

	Case 1		Case 2		Case 3	
	Before.	After.	Before.	After.	Before.	After.
Leukocytes	6,400	7,200	9,600	7,000	6,800	6,800
Polynuclear	54.0	51.0	58.0	61.0	60.0	62.0
Small lymphocytes	26.0	28.0	28.0	34.0	24.0	18.0
Large lymphocytes	14.0	15.0	9.0	3.0	14.0	18.0
Transitional	3.5	3.0	4.0	2.0	2.0	....
Eosinophils.......	1.5	2.0	1.0	....	....	....

	Case 4		Case 5		Case 6	
	Before.	After.	Before.	After.	Before.	After.
Leukocytes	8,000	9,200	5,600	5,940	7,360	7,840
Polynuclear	69.5	70.1	71.5	64.2	72.0	68.4
Mononuclear	2.0	1.0	3.0	2.0	2.0	3.0
Transitional	2.0	2.0	1.0	3.1	1.0	3.0
Lymphocytes	26.5	26.9	24.5	30.7	25.0	25.6

In view of the fact that phagocytosis most probably plays a principal rôle in Nature's method of curing typhoid fever, the question of the effect of vaccines on the leukocyte count should not be ignored. I am not aware that this aspect of the subject has been investigated hitherto, but it seems to me to be one quite worthy of further consideration. It is clear, if the foregoing premises be correct, that an increased production of polynuclear leukocytes must stimulate, to a corresponding extent, the phagocytosis of the intruding organisms of this disease. But though my own observations, which are too few to warrant generalization, show that small doses of vaccines do not, to any appreciable degree, stimulate phagocytosis during typhoid fever, it is desirable also, to note effect of larger doses.

Finally, it must be conceded that in the complicated process of active immunization, other, although doubtless minor, factors enter. For example, Nuttal and other observers found that "bacteria underwent changes indicative of death and destruction before they were taken up by the phagocytes" (Emery). It will not be denied that serum is an aid to phagocytosis by its action on the bacteria; hence opsonins are believed to be specific antibodies.

Granted that active immunity in typhoid fever is brought about mainly by an increase in opsonins circulating in the blood, it must be recollected, as pointed out above, that bacteriolytic antibodies set free the endotoxin of the typhoid bacilli, and hence may be a source of added danger. Under these circumstances, bacteriolytic serums can scarcely be regarded as Nature's means of establishing immunity.

If, however, as before stated, the process of immunization is dependent chiefly on phagocytosis, and if it be shown that the vaccines stimulate the bone marrow to an increased production of leukocytes, and, through chemotaxis, also, cause an increased output of these cells, then vaccine therapy is to be advised and encouraged.

The mobilized defensive forces in a case of typhoid fever, however, would seem to center about phagocytosis. In this connection, the fact that leukopenia exists in uncomplicated typhoid fever is to be recollected. At all events, in view of the foregoing facts, the use of vaccines in the treatment of this disease should be somewhat restricted according to conditions and indications presented by individual cases. Their routine use, however, is not to be encouraged, but it is obvious that an anti-endotoxin serum would, by neutralizing the soluble endotoxins, constitute the ideal method of treating typhoid fever. Such a serum has been prepared by MacFadyen, and favorable results have already been reported from its use, when administered early in typhoid cases. It is not improbable that the vaccine treatment of typhoid fever, except as indicated below, will give place to the method of establishing passive immunity by means of an anti-endotoxin. In view of the marked discrepancy among clinical observers as to the size and repetition of the doses, there would seem to be great necessity for an especial consideration of these aspects of the question of therapeutic inoculations in the future.

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[8] Emery: Immunity and Specific Therapy, pp. 390-391.
[9] Ruffin: Washington Med. Ann., 1909, viii, 77.

Vaccine therapy in the treatment of typhoid fever, however, should receive a more extended trial than hitherto, more particularly in the earlier stages of mild types of the disease, before being rejected. Finally, in the present state of our knowledge, the value of vaccines for the following purposes must be conceded: (1) as a means of prophylaxis; (2) in suitable cases when continued during convalescence, to prevent relapses; (3) to combat local infections with the typhoid bacillus, as for example, bone suppurations which arise in the period of convalescence, and (4) for the removal of the typhoid bacilli from the feces and urine in the case of typhoid-carriers.[10]

I desire to express my thanks to Dr. A. A. Stevens, who at my suggestion, treated three of the cases reported above with the results of blood examinations before and after the inoculations, in the wards of the Protestant Episcopal Hospital of Philadelphia, and to Dr. Robert B. Walker for furnishing one of the cases belonging to my series from the Philadelphia Hospital.

1605 Walnut Street.

THE FUNDAMENTAL PRINCIPLES UNDERLYING THE TREATMENT OF WOUNDS ON THE BODY SURFACE

CHAUNCEY E. TENNANT, M.D.
DENVER

Steadily through the maze of a multiplicity of methods, there has crystallized the present treatment of surface traumatic lesions. Based on the knowledge of definite pathologic and histologic processes and confirmed by the shorter periods of disability and lessened distortion of function, modern treatment of surface injuries may be reduced to two fundamental principles: *moist hyperemia* and *the open-air treatment;* in other words, the use of a dressing capable of giving sustained heat and moisture, or one so constructed that it will not displace the protective covering of coagulated serum, yet will protect the wound from further damage.

The wide latitude of pathologic possibilities in surface lesions, varying as they do from a microscopic skin puncture attended with violent constitutional toxemia and death, on the one hand, to extensive abrasions and lacerations with no constitutional manifestations on the other, has, in a measure, justified any course which has had as its result a satisfactory functional termination.

Until recently, little thought was given to the individual factor of lowered bacterial resistance, or the influence of the general state of nutrition on cell-regeneration. But now, with the more careful and detailed consideration of the possibilities of lowered resistance and cell nutrition, there has been a stimulus for the introduction of methods calculated either to intensify locally, or to increase, the number of antibactericidal bodies at the various parts of the organism where needed, or to engorge the tissues with nutritive plasma for the revitalization of the traumatized cell.

Surface lesions of the body widely differ in character, as burns, incised or crushing wounds, etc., and they may also vary from the small pin-point puncture to the extensive loss of continuity which is limited only by the size and force of the destructive agent. But so far as the end-results are concerned, the only difference is their type and degree of infection. Therefore the plan of treatment must be early outlined, if the most successful results are to be obtained. It is well known that in burns, skin-grafts and other superficial traumas which remain sterile, the dry method of treatment gives the most satisfactory results both as to convalescence and function, while the moist hyperemia is the treatment especially adapted to infected wounds, where the organism has lodged itself in the subcutaneous tissues and lymphatics.

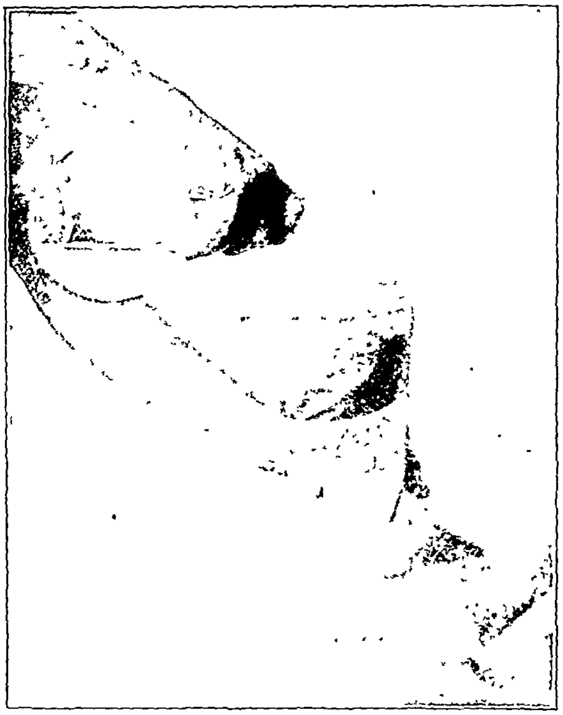
Fig. 1.—Method of applying large and copious wet dressings.

As a rule, the infection is either of the staphylococcic or streptococcic type; the former invariably localizes in a small area, while the latter is most likely to lodge in the subcutaneous tissues and extend rapidly along the lymphatics. Where resistance is fair and early excited, the chemotactic disturbance is quickly manifested with temperature and other clinical phenomena of inflammation. In either type of infection, it is *extremely impor-*

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[10] 10. Irwin, S. T., and Houston, T.: Lancet, London, Jan. 30, 1909, p. 311.

tant, as soon as it becomes evident that a pathogenic organism has lodged in the subcutaneous tissues and that the resistance force is low, that these natural forces be augmented by either the active or passive hyperemic process, or both. Every effort must be immediately made to create an overwhelming quantity of polymorphonuclear neutrophils and leukocytes to inhibit and digest the invading organisms before they have time to extend into the surrounding structures.

In all injuries involving a break in the skin, the first question to be determined is the presence or absence of infection, and if there is infection, whether or not the individual has sufficient resistance to destroy the organisms quickly providing moist hyperemia is properly used.

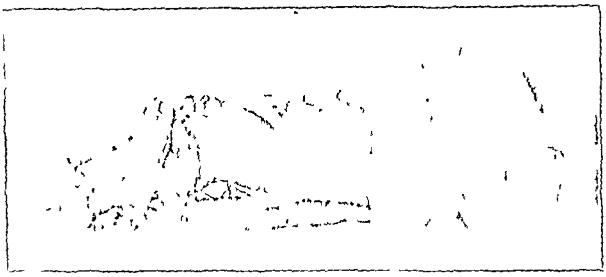

Fig 2

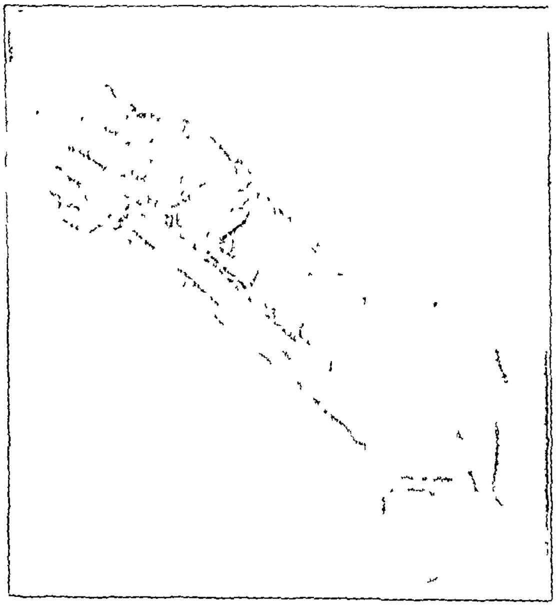

Fig. 3

Figs 2 and 3—Sheet of light aluminum to which is fastened a strip of poultry wire.

The time is not long past when all these wounds were considered as primarily infected, and vigorous steps were immediately taken to rid the host of the unwelcome guest. Active antiseptics were freely used, most of which were destructive alike to tissue and invading organism, and, as a result, tissue necrosis with moist surfaces, sloughs, granulations and large cicatrices was the common sequence.

At the present time, the practice of putting every injury in wet dressings, or even the use of copious washings, is uncalled for; especially as the coagulated serum is extremely soluble in water, and such procedure means the removal of Nature's protective layer of coagulation from the surface, and a portal left open for infection. The care of these cases, requires of course, considerable judgment, but why modern surgery should find any more reason for vigorous and persistent cleansing of these surface lesions than in the case of gunshot wounds of the extremity seems a question worthy of consideration.

If it is good practice to put gunshot wounds up in sterile dressings and wait for further evidence of infection, why should not the same principle apply to other reasonably sterile and easily accessible traumas of the surface? Where the history of the case shows a strong probability of there having been infectious material introduced into the wound, then great care should be used and proper application of the wet dressings made, with full knowledge of the fact that Nature's protective barrier must be sacrificed in the use of moisture.

We know that wherever infections occur, the use of moist dressings properly applied, quickly raises the polymorphonuclear neutrophilic blood content, which soon overwhelms the invading organism. Where no infection exists, the dry dressing, properly applied permits of surface coagulation of the exudates, which forms both a splint and an impervious barrier to further infection. Repair is very prompt in these latter cases if destructive antiseptics have not been used. Here the moderate application of sterile warm water and a bland soap, followed by open-air dressings, is usually all that is necessary to accomplish rapid and uncomplicated repair. Even in the greasy dirt-begrimed hands of the machinist, where it is not possible to wash the wound, the application of either turpentine or the tincture of iodin is very practical and effective, and may be safely followed by the dry dressing.

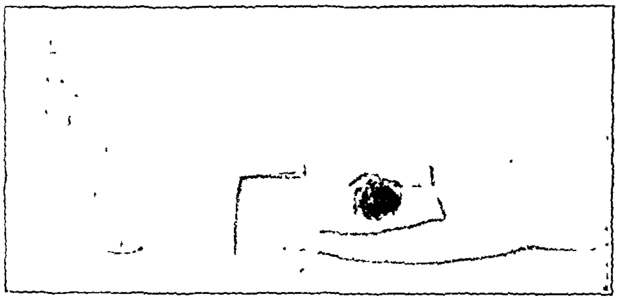

Fig 4—Copper or aluminum coated fly screen bound with adhesive tape.

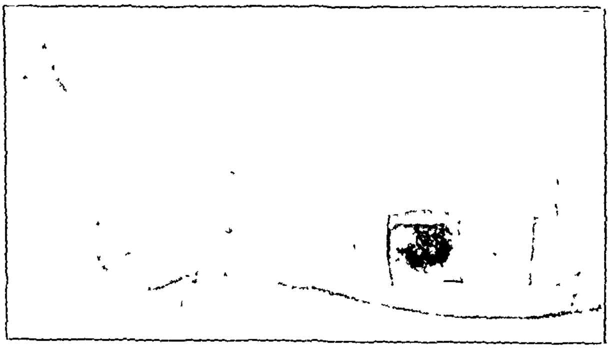

Fig 5—Adhesive straps are then passed over the screen, holding it firmly to the adhesive sheeting

The day of the local applications of salves and dressing powders in emergency surgery, fortunately, has passed. If the indications for *the treatment of these* cases are properly interpreted, and the principle underlying the use of moist hyperemia or open air is fully comprehended and applied, the profession at large will greatly reduce the number of general septicemias. Where infection is definitely present, free incision must of course be made, and followed by the application of very large and copious wet dressings, consisting of, first, the gauze covering the site of the lesion and near-by tissues, then several layers of cotton, and finally the oiled silk, moisture and bandage (Fig. 1).

If a finger only is involved, the entire hand should be included in the dressing, so that the full benefit of the hyperemia may be secured. When the oiled silk has been well fastened down, a last small opening should be left, through which the hot fluid is poured until the dressings are supersaturated. After this, the oiled silk should be completely closed, to retain both moisture and heat. A splint should then be applied to keep the part at rest. Extreme care must be exercised that the solutions poured into the dressings are not too hot, for extensive burns may easily be produced, which are often more serious to care for than the original lesion.

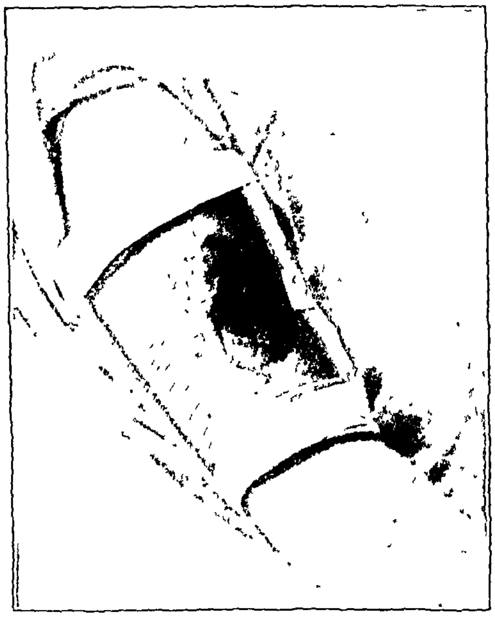

Fig. 6.—A very satisfactory dressing in skin grafting and varicose ulcers.

Several solutions may be used to moisten these dressings, the simplest and safest of which is the hot sterile physiologic salt solution. Equal parts of alcohol and saturated solution of boric acid make a solution which is ideal for use in early dressings, because of its local stimulating effect on the tissues, which produces an active local hyperemia. Thiersch's solution (salicylic acid, one-half dram, boric acid, 2 drams and a quart of sterile water), so well recommended by the late Nicholas Senn, is another safe and effective solution for use in the wet dressings.

Unless the dressings are large enough to retain both moisture and heat for long periods of time, they are worse than useless.

Dressings should be changed once in twelve to twenty-four hours, depending on the amount of discharge, but the solution should be repeated as often as necessary. A change of the solution is often of great advantage, especially if the alcohol has first been used, since the other named solutions are less stimulating yet almost as satisfactory as hyperemic agents. After a certain period tissues often refuse to respond to further stimulation. Where infection has not occurred, and is not likely to occur, it is much better that no dressings should come directly in contact with the wound, especially if it is extensive and moist. It has long been recognized that burns and traumas of the face, where dressings are not applied, soon heal with but little inconvenience to the patient, and a minimum of cicatrix. The same principle applied to other parts of the body works equally well. However, to devise successful methods for the application of treatment to these parts has been a difficult task, and the means at present used are almost as many as the surgeons applying them.

Two methods which I have been using for the last four years may be of interest, since they have been extremely satisfactory in my work (Figs. 2 and 3).

One is the use of a sheet of light aluminum as a base on which is fastened a cage made of poultry wire of any desired mesh for enclosing an extremity. The aluminum is light, clean, and easily punctured, yet firm enough to hold the poultry-wire top to the desired position. This frame is extremely light and comfortable, and easily applied. It is especially useful in extensive burns of the extremities.

The other is the use of aluminum-coated metal fly-screen, cut to the desired size, bound with adhesive tape, and set on strips of adhesive felt sheeting, which have first been cut, fashioned and attached to the skin about the outer margin of the wound (Figs. 4 and 5).

Adhesive straps are then passed over the screen, holding everything firmly to the part, yet nothing touches the wound (Fig. 6).

It is then covered with gauze dressings and snugly bandaged.

This last method has, in my experience, been very satisfactory in skin grafting, and in varicose ulcers of the leg. In the latter lesion, one may apply any form of medicament first, then cover with wire netting as described.

612 Empire Building.

SOME EFFECTS OF BRIGHT LIGHT ON THE EYES *

J. HERBERT PARSONS, F.R.C.S.
Surgeon, Royal London Ophthalmic Hospital; Assistant Ophthalmic Surgeon to University College Hospital
LONDON, ENGLAND

It is my first and most pleasing duty to express to you my high appreciation of the very great honor you have done me in inviting me to deliver this address to so distinguished an audience. It has been my good fortune to have met many of you on the occasions of your pilgrimages to the Old World. Moorfields and Vienna have long been the Mecca and Medina of ophthalmologists, and we at Moorfields are proud of the sacred fire which has been handed down to us by our predecessors. No branch of science, however, can flourish on the records of the past, and we in our turn must make pilgrimages to newer shrines, there to gather fuel to keep the sacred flame alight. I would fain believe that you in the past have learnt much from us; we too have learnt much from you. Thus in the brotherhood of science may we cement the brotherhood of race which is our inalienable heritage.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

I propose to speak to you to-day on some effects of bright light on the eyes. I cannot adequately traverse so large a subject in the short time available. I shall, therefore, confine my remarks chiefly to those details which have specially occupied my attention recently. We as ophthalmic surgeons are fully cognizant of many pathological conditions in which the harmful effects of bright light, natural or artificial, are manifest or may be reasonably conjectured. I need only enumerate eclipse-blindness, snow-blindness, ophthalmia electrica, lightning cataract, glass-worker's cataract, erythropia. In all these exposure to bright light plays an important if not a prepotent part. There are many other conditions in which this factor has to be taken into consideration, and we as yet know little of the prolonged effect of various sources of artificial illumination on the eyes. Engineers and others who devote their attention to artificial lighting have until recently paid little or no attention to the physiological and pathological aspects of the question. Efficiency—maximum illumination at minimum cost—has been their watchword. We opthalmologists, if we are honest with ourselves, must confess to a lamentable ignorance of the conditions which render bright light deleterious to the eyes and of the methods whereby these conditions may be ameliorated. We must set our house in order and this dusty corner must be swept and garnished.

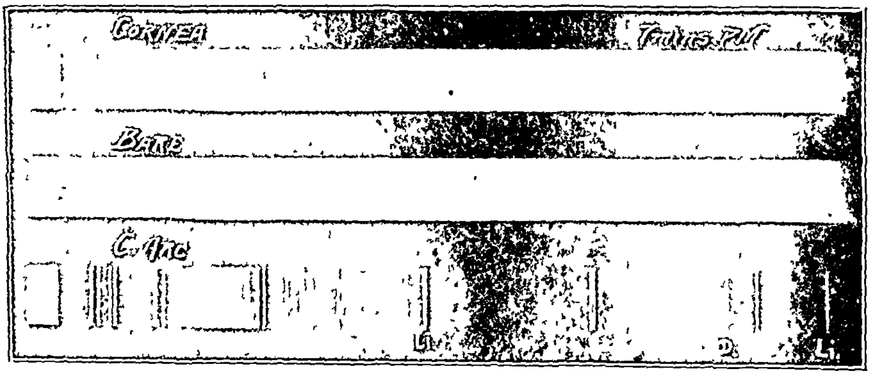

Figure 1

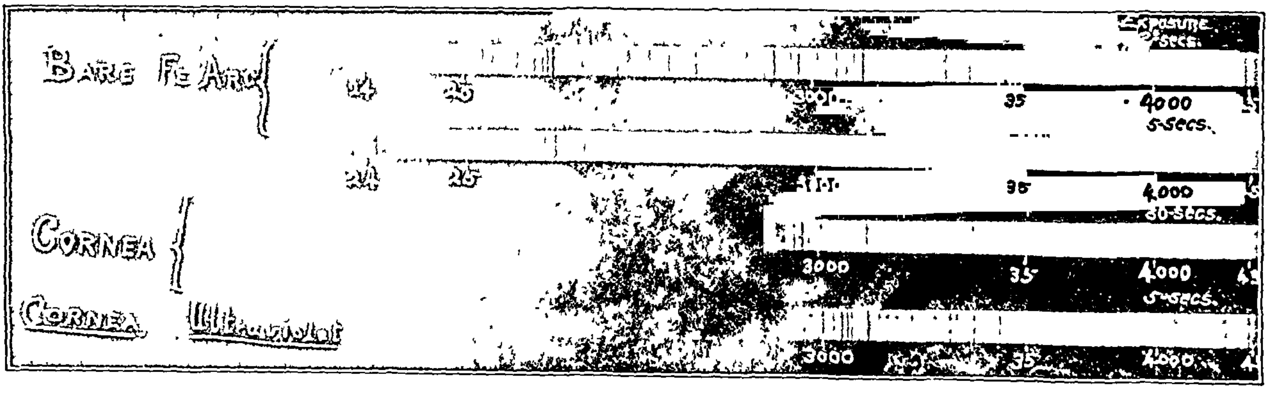

Figure 2.

Figs 1 and 2—Photographs showing spectra of cornea with carbon and bare iron with different lengths of exposure. The cornea was found to offer no resistance to wave lengths greater than 295 microns, but all those beyond this limit were completely cut off.

THE PHYSICS OF BRIGHT LIGHT

The first problem which confronts us is a physical one. What is bright light? Physiology is the knowledge of the response of the living organism to physical stimuli, and ere we can attain to certain knowledge of the inception, development and consummation of the response we must obtain accurate information of the forces which initiate it. What is generally understood by the term bright light is a composite congeries of allied manifestations of energy, comprising such apparently various forces as heat, light in the narrower sense of the word, and chemical action. Various as these forces are, they are physically identical in character, all consisting of waves of identical character, differing only in length and rapidity of vibration. Those of longer wave length cause the sensation of heat, those of shorter wave length give rise to chemical action, whilst those of intermediate wave length cause the sensation of light; but while the physical series is perfectly and mathematically uniform, the physiologic manifestations overlap and vary according to the nature and condition of the recipient organs. I may seem to you to be laboring over elementary details, but it appears to me to be of the greatest importance to bear them well in mind, as I hope now to prove. If we take ordinary sun light as the basis of our investigations it is possible to split it up by appropriate means into its component "rays," differing from each other in wave length. Of these, certain are visible and constitute light in the narrower sense of the word, but instead of giving rise to the sensation of white light they, to the majority of people, show certain pure colors, viz.: red, orange, yellow, green, blue and violet in order, the red having the longest, and the violet the shortest wave length. The visible spectrum extends from about 723 microns at the red end to 397 microns at the violet end. Beyond the red end are rays of greater wave length which cause a rise of temperature; beyond the violet end are rays of smaller wave length which are capable of causing chemical action. So striking is the physiologic phenomenon of the visibility of the intermediate series that the heat rays are commonly spoken of as "infra-red" and the actinic or chemical rays as "ultra-violet." For this reason I think that the importance of the physical uniformity of the series is obscured and is liable to be lost sight of. For example, every average normal individual is not able to see all the rays from 723 microns to 397 microns; most people see fewer, roughly from 600 microns to 400 microns. Again, though the ultra-violet rays are particularly potent in inducing chemical action, the visible rays are also actinic, though in less degree, and the same is true of the infra-red rays in still less degree. Further, the longer visible rays also cause a rise of temperature. The most convenient and most striking method of demonstrating actinicity is by the photographic film, so that we have come to regard a photograph of the spectrum as a complete analysis of the light under observation, too often forgetting that the photograph varies with the specific sensitiveness of the film to particular groups of waves. Thus, it is only by specially sensitized films, invented by Sir William Abney, F.R.S., that it is possible to demonstrate infra-red rays photographically.

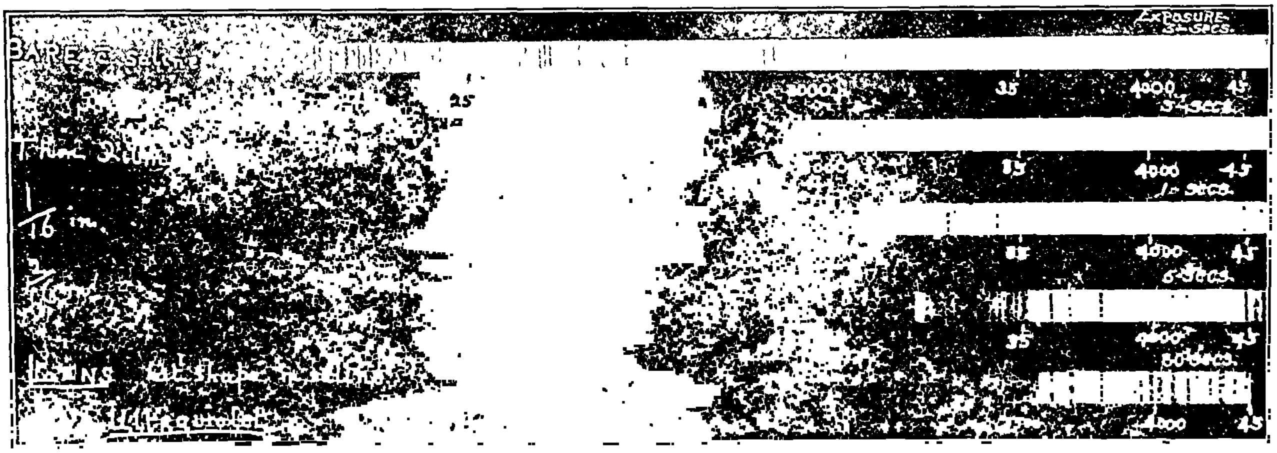

Figure 3.

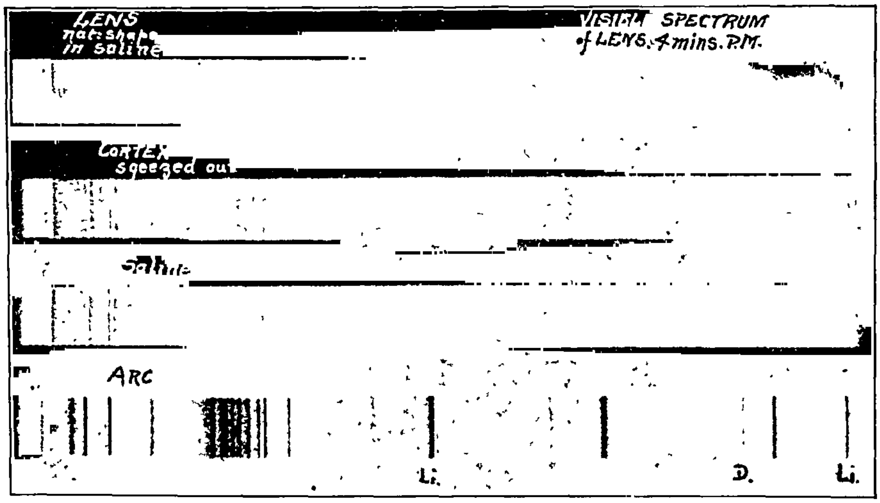
LENS nat. shape in saline
VISIBLE SPECTRUM of LENS 4 mins. P.M.
CORTEX squeezed out
Thin
ARC
Li.
D.
Li.

Figure 4.

Figs. 3 and 4.—Photographs showing spectra of lens suspended in normal saline, in thin films and squeezed to different thicknesses, with different periods of exposure. Rays of wave lengths less than 350 microns are absorbed completely, absorption commencing at about 400 microns. Absorption varies *pari passu* with the thickness of the layer of lens substance.

It is further essential that the mode of analysis of the light under observation be unexceptionable. An ordinary spectroscope with glass prisms and lenses suffices to demonstrate the visible spectrum, and indeed with minute accuracy, but it is almost useless for showing the shorter ultra-violet rays, since these are absorbed by the glass. In order to demonstrate the full extent of the spectrum it is necessary to use a train of lenses and prisms made of quartz, which allows a maximum number of rays to pass unimpeded.

PRACTICAL CONSIDERATIONS

To come now to the practical application of these considerations to the problem before us, we must guard against presuming that the retina will act exactly like a particular photographic film; that because a light very rich in ultra-violet rays produces a particular effect on the retina or lens, that effect is produced solely by ultra-violet rays and that the visible rays play no part in the causation; that because certain rays produce pathologic changes in the retina of the aphakic eye they will produce the same changes in the normal eye—they may be absorbed by the lens; and so on.

From what I have already said it should be obvious that the next point in logical sequence in our investigation should be the determination of the absorptive capacity of the various dioptric media of the eye for particular rays of the solar spectrum. There is an additional reason in favor of this procedure in that the absorption of energy means simply the transformation of energy, and it may be that the transformed energy is exerted deleteriously on the organ under investigation. Thus the absorption of particular rays by the lens may be the cause of pathologic changes in that structure. But before passing on to this question it will be well to describe the nature of the rays emitted by various sources of artificial illumination, partly because it is more convenient to use some of these in experimental investigations than sunlight, and partly because we wish to find out if these have any deleterious effects, and if so, their nature and cause.

THE SPECTRA OF ARTIFICIAL LIGHTS

The spectra of artificial lights show a remarkable variety in the range of rays emitted. They have been investigated by many observers, notably recently by Schanz and Stockhausen and Hallauer. Schanz and Stockhausen's observations unfortunately do not give accurate limits of the spectra in wave-lights. It will suffice to state roughly the limits of a few of the commoner lamps used for ordinary illumination or for experimental purposes. A petroleum lamp with an ordinary white glass cylinder gives a spectrum from 600 microns to 350 microns; osmium and tantalum lamps from 630 microns to 300 microns, an Auer incandescent gas lamp with glass cylinder from 600 microns to 329 microns, an arc lamp with clear globe from 600 microns to 300 microns, the same lamp without any globe from 600 microns to 230 microns; with an opal globe down to about 330 microns. The Schott uviol mercury vapor lamp, in which incandescent mercury vapor is contained in a long tube made of a special quartz-glass gives forth ultra-violet rays down to 253 microns, but is poor in red and yellow rays.

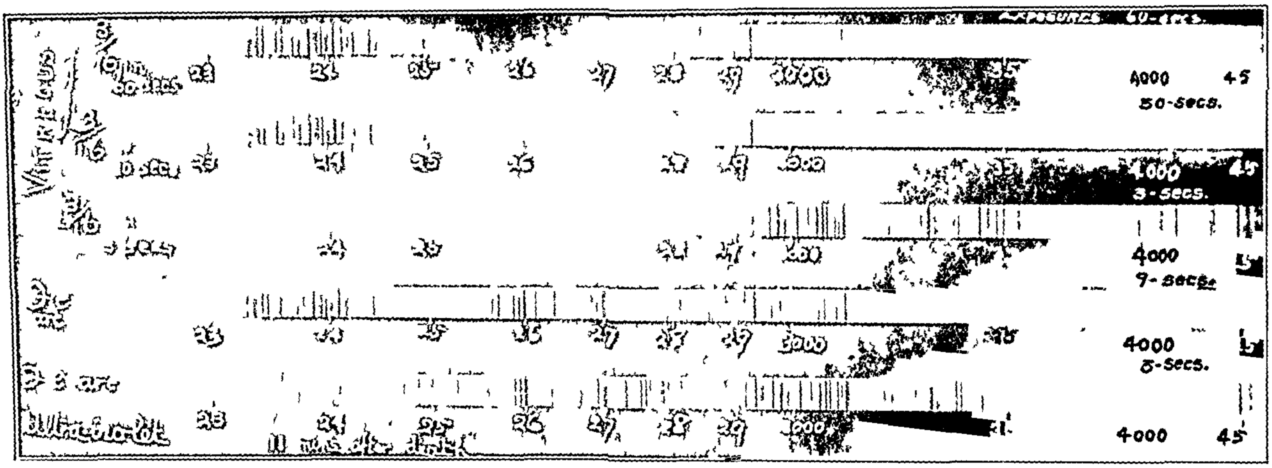

Figure 5

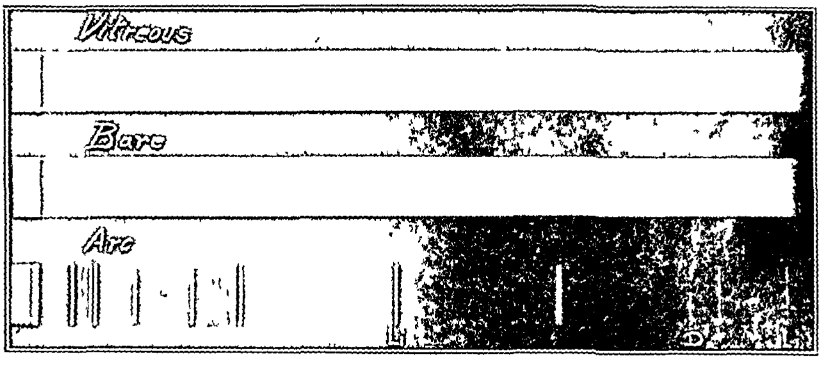

Figure 6

Figs. 5 and 6.—Photographs showing spectra of vitreous. The vitreous in a layer 3/16 inch thick shows a broad absorption band extending from 280-250 microns, with a maximum at 270. The margins of the band are ill defined. Exposures for different periods as shown.

ABSORPTION BY THE DIOPTRIC MEDIA

Passing now to the absorption of light by the dioptric media of the eye we have to investigate the cornea, lens, and vitreous. The aqueous acts like water and causes very little absorption of visible or ultra-violet rays. Like water, too, it absorbs heat strongly, so that it is improbable that even with exposure to extreme heat such as is met with in iron works and glass works much heat reaches the lens. More experiments, however, are needed on this point and it is unjustifiable to be dogmatic in the present state of our knowledge.

EXPERIMENTS

I made some experiments two years ago on the absorption spectra of the cornea, lens and vitreous of the rabbit with Messrs. E. C. C. Baly, F.R.S., and E. E. Henderson. These have since been extended and confirmed by my assistant, Dr. E. K. Martin.

In this research experiments were made to determine the precise limits within which rays are absorbed by the refractive media of the eye, and the effect on these limits of keeping the media some hours after the death of the animal. Young rabbits were used in all cases.

The spectrophotographic method of recording the results was used and the media were mounted in cells with parallel sides. In the case of the cornea and vitreous the cell was placed close to the slit of the spectroscope. The lens was dealt with in two ways:

1. Suspended in normal saline and placed at a distance from the slit greater than its focal length, so that a blurred image of the source of light was thrown on the slit. This was necessary to avoid horizontal lines on the resulting photograph; the precautions taken quite excluded the possibility of stray light entering between the cell and the slit.

2. A thin layer of lens substance was squeezed out flat between the parallel sides of the cell; this was done to eliminate any possible apparent absorption due to the shape of the lens.

A preliminary series of spectro-photographs was taken to eliminate absorption within the limits of the visible spectrum. In this the source of light was the crater of a carbon arc and a 2-prism spectroscope was used, the prisms and lenses of the instrument being of glass.

The plates used were "orthochromatic," and it was found that they regularly showed three faint absorption bands in the green, yellow and red. These represent the absorption of the dye used to sensitize the plates to red light.

All the media were found to be uniformly permeable to rays between the wave lengths 660-390 microns. (The visible spectrum extended from approximately 760-380 microns.)

For the ultra-violet rays the iron arc was the source, and quartz was used throughout. Ordinary plates were used, i. e., plates containing no dye and hence giving no absorption bands. The range of wave lengths covered in this series was 450-230 microns.

Cornea. The cornea was found to offer no resistance to rays of wave-lengths longer than 295 microns, but all those beyond this limit were completely cut off.

Lens. (a) Suspended in normal saline. Rays of wave-lengths less than 350 microns are absorbed completely. The line is not a sharp one, the absorption commencing at about 400 microns.

(b) Squeezed to different thicknesses. The absorption varies *pari passu* with the thickness of the layer of lens substance.

Vitreous. The vitreous in a layer 3/16 inch thick shows a broad absorption band extending from 280 to 250 microns, with a maximum at 270 microns. The margins of the band are ill-defined.

These results agree closely with those recently obtained of Schanz and Stockhausen and Birch-Hirschfeld.

The shortest interval between the death of the animal and the taking of the observation was three minutes, the longest eleven minutes.

Observations were also made on the vitreous 1 hour, lens 5 hours, and cornea several hours after the death of the animal. The results obtained were identical with those from fresh specimens.

The photographs were taken at the Imperial College of Science and Technology, South Kensington, those of the visible spectrum in Sir William Abney's laboratory, the ultra-violet series in the astrophysical laboratory by kind permission of Professor Fowler, F.R.S., to whom I am indebted for valuable suggestions.

OTHER EXPERIMENTAL OBSERVATIONS

It would be unsafe to apply these results, obtained with rabbits' eyes, directly to the human eye. As regards the cornea and vitreous observations of a similar nature made by Schanz and Stockhausen on the calf's eye are confirmatory. Birch-Hirschfeld has similarly investigated the eyes of calves, pigs and oxen. He found little difference in the absorption of ultra-violet rays by the cornea, giving the limit as 306 microns, somewhat higher than for the rabbit, and rather more than that of ordinary glass, the limit of which may be taken as 300 microns. In all cases too Birch-Hirschfeld found the limit of absorption to be 300 microns for a layer of vitreous 1 cm. thick. Greater differences which cannot be neglected were found with various lenses. Those of the rabbit's lens varied between 330 microns and 390 microns. For the pig's lens the average limit was 330 microns with variations of about 15 microns; for the calf's 328 microns, with variations of 12 microns; for the ox lens from 270 microns to 400 microns.

Schanz and Stockhausen examined the cornea and lens of a child who had glioma. They do not give accurate wave-lengths, but the cornea absorbed up to nearly 300 microns, and the lens about the same; whereas in a case of injury, whilst the corneal absorption was about the same, that of the lens was much greater, up to about 350 microns.

Hallauer has recently found that the corneal and vitreous absorption in the eye of a man of forty extended to 295 microns. He has examined a large series of human lenses from individuals of different ages and has arrived at some valuable conclusions. He finds the limits of absorption on the whole dependent on age, with some individual variations due to thickness, color and consistence, general disease also introducing a disturbing factor, which must be taken into account in Schanz and Stockhausen's case of glioma. In babies and children absorption extends to 400 microns, often combined, however, with an inability to absorb rays from 300 to 310 microns. This transparent band persists up to about the twentieth year and may be more extensive in debilitated conditions. *Pari passu* with the loss of this band after twenty the limit of absorption retracts to about 377 microns, but extends with advancing age to 400-420 microns; extreme debility from disease diminishes absorption to a minimum of 375 microns.

From these investigations it will be seen that the lens has a very powerful capacity for absorbing ultra-violet rays. This fact is indeed easily and strikingly demonstrated by the strong fluorescence which occurs when these rays fall on it. Schanz and Stockhausen attribute the fluorescence to rays between 400 microns to 350 microns, but as Helmholtz pointed out, a fluorescent body always absorbs strongly those rays which induce the fluorescence. Hence the chief rôle must be allotted to rays between 350 microns and 300 microns, for those from 400 microns to 350 microns are absorbed to a relatively slight extent by the lens. Another fact pointed out by Helmholtz, that the light emitted by fluorescing bodies is of longer wave length than that which causes the fluorescence, confirms this view. Fluorescence is indeed a degradation of invisible ultra-violet rays to rays of the visible spectrum. The investigation of this question is not unattended with complicating features, especially those due to fluorescence of the observer's own lenses.

PATHOLOGIC CHANGES PRODUCED

Whatever be the exact limits of the ultra-violet rays which are capable of causing the crystalline lens to fluoresce, there is no doubt about the fact, nor that such rays are absorbed by the lens. It is not, therefore, illogical to conjecture that these rays may produce pathological changes in the structure. For this reason, in conjunction with Mr. E. E. Henderson, I have exposed rabbits' eyes for prolonged periods to the light from Schott's uviol mercury vapor lamps. Similar experiments have been made independently by Hess, Birch-Hirschfeld, and others. As already stated, these lamps emit ultra-violet rays down to 253 microns. Four tubes were used and the rabbit's eyes were situated about 20 cm. from them, exposures of one to four hours being made repeatedly two or three times a week for several weeks. At the distance used the rise of temperature is negligible. It should be noted that the eyes were exposed not only to the ultra-violet, but also to the visible rays. Even with the longest exposures no definite opacification of the lens was observed ophthalmoscopically, nor even on examining the lens macroscopically after killing the animal. After hardening in Zenker and examining the anterior capsules microscopically, however, changes could be seen in the anterior capsular cells. These changes have been well described and illustrated by Hess, and our conclusions as to their appearances are in agreement with his.

When the capsule, stained with hematoxylin and eosin is spread out and examined the most noticeable feature is the marked difference between the capsule cells in the pupillary area and those immediately surrounding this area. The nuclei of those exposed are swollen and their chromatin stains badly; the cytoplasm may be vacuolated. In the surrounding zone, behind the pupillary margin of the cornea, the cells are very closely packed together. The nuclei are small and the chromatin stains deeply. There may be mitoses in this area as well as still more peripherally. It is probable, as Hess conjectures, that the crowding together of the anterior capsule cells behind the iris is purely mechanical due to the swelling of those in the pupillary area, and is not caused by any compensatory regeneration. In some of his specimens it led to actual multiplication in the layers and heaping up of the anterior capsule cells.

Changes similar to those described were observed by Widmark after exposure to light from the arc lamp. Hess found that the changes did not occur if a glass plate which absorbed the rays of smaller wave length than 300 microns, was interposed between the lamp and the eye. I am not convinced of the accuracy of this observation. Examination of control capsules shows that the changes are rather those of degree than absolutely abnormal phenomena. More work on the dark-adapted eye is needed to settle this point conclusively. Hess considered that the experiments prove that the changes are due to rays of smaller wave length than 300 microns. But, as already stated, there is ample evidence to show that such rays do not reach the lens, being absorbed by the cornea. No similar experiments in which the visible rays, i. e., those of greater wave length than 400 microns are cut off, (only those between 400 microns and 300 microns being allowed to fall on the lens), have been carried out. It is most probable that the changes are due partly to ultra-violet rays of greater wave length than 300 microns and partly to rays of the visible spectrum. We have here a further example of the necessity for bearing well in mind the fundamental fact of the physical continuity and similarity of the rays of the visible and of the ultra-violet spectra.

CHANGES IN THE LENS—BOTTLE-MAKER'S CATARACT

Many pathologic changes in the lens in which bright light may be, or at least has not been disproved to be, an important etiological factor will occur to you. I do not propose to discuss this factor in the causation of senile cataract. Schanz and Stockhausen attribute to it a preponderant rôle. In this I think they go far beyond the bounds which the scanty evidence at present available warrants. I will confine my remarks to glass-workers' cataract, which occurs under conditions of exposure to intense glare and in which the influence of bright light has at any rate to be eliminated before we can arrive at a just conclusion as to its causation. Attention was first directed to the prevalence of cataract in glass-blowers by Meyhöfer of Görlitz in 1886. Much additional information was brought forward in 1888 in an inaugural dissertation by Röhlinger of Munich Since that date papers have been published by Cramer of Kottbus, Robinson of Sunderland, Snell of Sheffield, and others. In 1907 the British Home Office published a valuable report by Dr. Morison Legge, H. M., Medical Inspector of Factories, who confirmed the prevalence of the disease in this class of workmen, doubt having been expressed on the point by Snell. The matter came under the consideration of the Departmental Committee appointed in 1906 to schedule industrial diseases for the purpose of the Workmen's Compensation Act (1906). As a result the Home Office approached the Royal Society in 1908 with a view to their appointing a committee to investigate the physical and physiologic problems involved. A committee, consisting of physicists, physiologists and ophthalmologists, the latter including Mr. E. Nettleship, the late Mr. Marcus Gunn, whose recent loss we all deplore, and myself was appointed. In the autumn of 1908 a subcommittee, including Mr. Marcus Gunn and myself, visited some of the most important glass-works in Sunderland, Gateshead, and St. Helens. Such clinical investigation as we were able in the short time at our disposal to carry out seemed to prove conclusively that bottle-makers are subject to a form of cataract which appears to be characteristic and is unlike other forms of cataract commonly observed. In its typical form there is a dense, well-defined disc of opacity in the center of the posterior cortex. Not infrequently slighter hazy opacities are seen around the posterior cortical disc. Makers of pressed glass articles may also show cataractous changes in the lens. The typical condition, however, was seen in only one case, out of five of the selected cases examined, the remainder having forms of cataract differing in no respect from those not infrequently seen in elderly persons. Some of the patients examined showed deficiency in the power of distinguishing violet. It is not improbable that prolonged exposure to the conditions of work causes changes in the excitability of the retina. (The observations of Birch-Hirschfeld on defects of color sensation and in the color fields in cases exposed to the action of mercury-vapor lamps are interesting in this connection.) We were unable to examine any patients who worked in plate-glass manufactories. There is reason to believe that they also suffer from the disease.

Investigation of the physical conditions in glass bottle manufacture has been carried out by Sir William Crookes, F.R.S., for the Royal Society Committee, and by Schanz and Stockhausen. The materials are melted in a large fire-brick tank, heated by incandescent gas and air playing over the surface. The area of the tank is about 82 square yards and it contains some 300 tons of "metal." The tank is divided into two unequal parts by a fire-clay partition, having at the lower part an opening through which the melted glass can flow. The "working end" has an area of about 19 square yards. The temperature at the "melting end" is probably about 2,000 C., that at the working end 670 C. Schanz and Stockhausen found that the temperature at the place where the worker takes the molten metal from the tank is about 110 C.; the intensity of the light falling on his eyes is about 540 Lux.

Spectro-photographic investigation shows extension of the spectrum at each end with increased length of exposure. A photograph with twenty minutes' exposure includes wave lengths 452 microns to 690 microns; with one hour exposure, 364 microns to 760 microns; with three hours exposure, 334 microns to 780 microns. The ultra-violet area is, therefore, limited to rays of comparatively long wave length, but it is probable that this varies with the exact composition of the "metal" used. The heat rays at the red end are extremely powerful.

Exposure of sensitive films wrapped in black paper and lead foil in which designs had been cut showed complete absence of x-rays even after prolonged exposure.

Schanz and Stockhausen conclude from their observations that glass-workers' cataract is due to ultra-violet rays. In my opinion the experiments are by no means conclusive in either direction. It is certain that most of the ultra-violet rays emitted by the molten glass will be absorbed by the cornea, only relatively few of those of shorter wave length reaching the lens at all. The problem is an extremely difficult one, for it is certain that the disease occurs only in men who have been engaged at the work for many years. It is most commonly found in "finishers," experienced men who have been through all the stages of bottle-making ("taker in," "wetter off," "gatherer," "blower") and who are engaged in putting the rings on the mouths of the bottles. These men work close to the furnace, taking the metal from the tank, applying it to the mouth of the bottle, and fashioning it to the required form with a mould. They are continually looking into the furnace or at the mass of glowing, viscid glass. A finisher can do from 50 to 120 dozen bottles a day. Only the best workmen are promoted from blower to finisher. The cataract occurs also among the gatherers who collect the requisite amount of metal from the tank on the blowpipe, and the blowers, but only if they have been long engaged in the trade. Blowers have always previously been gatherers, so that both classes have usually been long engaged in an operation which requires looking repeatedly into the furnace and at the gradually cooling mass of glass.

It is extremely difficult to devise conclusive experiments for the elucidation of a problem in which the causal agent acts slowly over a very prolonged period, and until further experiments have been made to eliminate the heat factor it would be unwise to make any dogmatic statement as to the true cause of glass-worker's cataract.

EFFECTS ON CONJUNCTIVA

The diseases which I have already touched on by no means exhaust the list of those attributable to bright light and ultra-violet rays. One of the chief difficulties which we have to contend with in experimental exposure of the eyes of animals to light rich in ultra-violet rays, is the intense congestion and inflammation of the conjunctiva which is soon brought about. The irritation does not manifest itself until a latent period of some hours has elapsed, but is much aggravated by repeated exposures, so that finally the cornea is almost covered by the chemosed conjunctiva and swollen lids. The experimenter himself is not immune from this intense conjunctivitis, which is encountered also among photographers using mercury-vapor lamps, men engaged in testing photometrically naked arc lights, and so on. Complete protection is afforded by wearing plane clear glass spectacles, or, in the case of experiments on animals, by interposing a plate of glass between the animal's eye and the source of light. Since ordinary glass cuts off all the ultra-violet rays of shorter wave length than 300 microns, whilst permitting the visible rays to pass almost unimpeded, it must be concluded that the irritation is caused by ultra-violet rays of lower wave length than 300 microns. Exactly the same clinical manifestations have long been known after exposure of the unprotected eyes to light reflected from vast surfaces of snow. There is every reason to believe that "snow blindness" is due to the same cause, since at high altitudes fewer ultra-violet rays are absorbed by the atmosphere and more are reflected from the brilliant white surfaces. The same rays are responsible for "sun burn," and a striking demonstration of the absorptive capacity of the crystalline lens for these rays is shown by placing a crystalline lens on the skin and then exposing it to intense sunlight. When the "sunburn" develops, a white spot of unaffected skin marks the place where the lens lay. "Ophthalmia electrica" is of exactly the same nature as "snow blindness" and is due to the same cause.

OTHER EFFECTS

Birch-Hirschfeld has reported cases which tend to prove that exposure to light rich in ultra-violet rays is not without effect on the normal retina, so that minor defects in the color fields are produced. He found in experiments on animals that such light produced definite changes in the ganglion cells and the cells of the nuclear layers, resulting in chromatolysis, vacuolation of the cells, etc. changes which were much increased in eyes rendered artificially aphakic.

The red vision which is often so troublesome a symptom after exposure to bright light in persons who have been operated on for cataract has also been attributed to the action of ultra-violet rays. Erythropsia occurs, however, or may be induced in normal eyes, in which the absorptive capacity of the lens has to be taken into account, and is further said by some not to be prevented by wearing glasses, though this is denied by others. It cannot, therefore, yet be concluded with certainty that ultra-violet rays are solely responsible for this phenomenon.

PROTECTIVE MEASURES

Enough has been said to show that ultra-violet rays are without doubt deleterious to some parts of the eye and are probably so to other parts under certain conditions. Protection of the eyes from these rays is therefore indicated if means can be adopted which are not too inconvenient and which do not seriously interfere with the visible rays. Many observations have been made on the penetrability of various types of glass in common use, and attempts have been made to make a glass which will absorb all the ultra-violet rays without materially reducing the transparency to light. For experimental purposes maximum penetrability to ultra-violet rays is sometimes desirable. Messrs. Schott, of Jena, have manufactured a quartz glass for this purpose called "uviol." Schott's uviol crown glass (U V 3199) transmits rays down to 280 microns. It is therefore rather more transparent to ultra-violet rays than ordinary glass, though it falls very far below quartz in this respect. A few examples of the absorption of ordinary glasses may be given.

Borosilicate Crown Glass absorbs rays below 295 microns; flint glass (0.103) below 315 microns, partially 315-320 microns; ordinary blue glass below 320 microns; ordinary smoked glass below 345 microns; heavy flint glass (0.198) absorbs all rays below 375 microns, and many from 375-400 microns. Heavy flint glass therefore so far as impenetrability to ultra-violet rays is concerned meets most requirements; it is, however, quite unsuited for spectacle lenses on account of its weight.

Special glasses have been devised and placed on the market, said to absorb all the ultra-violet rays, i. e., below 400 microns. Of these the chief are "Enixanthos" glass, Fieuzal glass and "Euphos" glass (Schanz and Stockhausen). All have a greenish yellow tint, varying in intensity.

Schanz and Stockhausen assert that "Euphos" glass absorbs only 5 per cent. of visible light, but Vogt puts the figure at 25 per cent. The latter author points out that the manufacture of experimental glasses which absorb all the ultra-violet rays was accomplished long before Schanz and Stockhausen introduced their widely advertised "Euphos" glass. Eder and Valentin in 1894 made several glasses of this kind, notably a red glass containing copper oxid and others containing iron oxid. They showed that the absorption was much increased by the addition of lead to the metal. Analysis of "Euphos" glass by Dr. Werder in Aarau showed that it was an iron glass containing lead.

Sir William Crookes has recently made some valuable experiments on the diathermancy and permeability of glasses to visible and ultra-violet rays for the Royal Society Committee. Various green glasses long used in the Palm House at Kew Gardens, specially adopted because of their impermeability to infra-red rays, were examined. One of these, a very dark green glass, originally used in the ferneries, is remarkable for the short length of spectrum it transmits. It is opaque at the red end to rays longer than 579 microns and at the ultra-violet end to all rays shorter than 468 microns. On account of its color and the amount of light which it absorbs it is unsuitable as a protective glass. An almost colorless glass, tinged with didymium, is remarkable. It is opaque at the red end to rays longer than 656 microns just transmitting the hydrogen red. At the ultra-violet end it is opaque to rays shorter than 398 microns. Sir William Crookes suggests that further experiments should be carried out to include glasses tinted with other colored rare earths, as well as such metals as nickel, cobalt, chromium, uranium, etc., and also containing colorless oxids. It is noteworthy in this connection that Eder and Valentin found that ordinary cobalt glass is scarcely more absorptive of ultra-violet rays than ordinary flint or crown glass. It would appear that the almost colorless didymium glass best meets the requirements for protecting the eyes against the action of ultra-violet rays.

CONCLUSION

In any case there can be no doubt that the problem will be solved with relative ease. Much remains, however, to be accomplished in the direction of determining with greater accuracy the physiologic and pathologic potency of these rays. If I have succeeded in arousing some interest in the subject and directing the attention of others able and qualified to extend the researches, my remarks, scattered and disjointed as they are, will not have been wholly vain.

THE PHYSIOLOGIC ACTION, USES AND ABUSES OF ALCOHOL IN THE CIRCULATORY DISTURBANCE OF THE ACUTE INFECTIONS *

JOSEPH L. MILLER, M.D.
CHICAGO

The reputation of alcohol as a cardiac stimulant is as old as our knowledge of medicine. It has been a household remedy for generations and even radical prohibitionists have permitted its use for medicinal purposes. The medical profession in this country have prescribed it freely, and especially in that group of cases under consideration—the acute infections. It has been so securely entrenched in our therapeutic armamentarium that in this country, until very recent years, those who opposed its use in certain acute infections, as pneumonia, were looked on as temperance fanatics. As a preface to the present discussions the therapeutic history of alcohol in Europe during the last century is of interest.

Alcohol was so little used in Germany in the treatment of the acute infections during the middle of the nineteenth century that a physician in Coblentz was held responsible for the death of a typhoid patient for whom alcohol had been prescribed. Shortly after this, Todd, in Dublin, advocated its use in pneumonia and his teachings were quite extensively followed in the British Isles. Somewhat later Binz and his pupils, having demonstrated that alcohol was a food and reduced rather than elevated body temperature, the German clinicians, headed by Von Jurgensen, began using it extensively in febrile conditions. This wave reached its height at the Wiesbaden Congress in 1880, when alcohol was generally lauded as a valuable therapeutic agent in the acute infections. Immediately after this the experimental work of Schmiedeberg and Von Noorden and the clinical experience of Strümpell cast a shadow of doubt over its desirability, and since that time the pendulum has been swinging the other way. This is shown by the lessened consumption of alcohol in some of the large general hospitals in Europe, as, for instance, in the Vienna General Hospital, in which in 1897 $10,000 was spent for alcohol, and in 1905 this had been reduced one-half; and Cabot has shown that there is the same tendency in some of the large general hospitals in this country.

That the amount of alcohol used for medicinal purposes is on the wane does not necessarily prove that it has little value as a therapeutic agent, especially as the change in sentiment has been directly associated with a general prohibition movement.

For our purpose we must approach the subject from a different standpoint, viz.: first, the character and cause of the cardiovascular disturbances in the acute infections; second, the physiologic action of alcohol on the normal mammalian heart; third, the action of alcohol on the cardiovascular apparatus of man and animals suffering from acute infections, and finally, evidence collected from clinical experience.

It is perhaps unnecessary to mention that alcohol has some value as an antipyretic, owing to its inhibitory action in the process of oxidation (von Wendt).[1] Of more importance, and perhaps meriting a word, is its effect in combating the toxemias of the acute infections. There is still considerable difference of opinion on this point, but the recent careful experimental work of Laitinen[2] lends support to the earlier views of Koch and Doyen, that even in small doses it diminishes the bactericidal powers of the blood and lessens the animal's resistance to infection.

NATURE OF CARDIOVASCULAR DISTURBANCES

Regarding the nature of the cardiovascular disturbances in the acute infections, the early clinicians recognized the frequency of weak heart, ascribing it to the fever and parenchymatous changes in the heart muscle, first detected and described by Virchow. Somewhat later Hayem called attention to the interstitial changes and the endarteritis and thrombosis of the coronary arteries, this latter accounting for the sudden deaths met with, especially in diphtheria. Romberg was able to demonstrate a progressive acute myocarditis developing some time after the onset of the infection and continuing for some time after its subsidence. Demich attacked

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* Read in the joint session of the Sections on Practice of Medicine and Pharmacology and Therapeutics, of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

[1] Von Wendt, G.: Ueber die Einwirkung des Alcohol auf die Körper-Temperature des Menschen, Skand. Arch. f. Physiol., 1907, xix, 171.

[2] Laitinen, [illegible] kleinsten Alcohol-menge auf die [illegible] Organismus, etc., Ztschr. f. Hyg. [illegible] lii, 139.

the problem from the physiologist's standpoint and discovered that cardiovascular changes analogous to those present in the acute infections could be produced by section of the cord or by vasomotor poisons, such as chloral or chloroform. This led Naunyn[3] to investigate more carefully the clinical signs and symptoms of the cardiovascular apparatus in the acute infections; his results supported Quincke's theoretical views, inasmuch as the ordinary signs of weak heart-muscle, such as faint heart-tone, feeble pulse, arrhythmia and bradycardia were exceedingly infrequent, the clinical findings pointing more to disturbances in the vascular mechanism. Riegel, with the assistance of the sphygmograph and Maragliano[4] with the plethysmograph, confirmed in the main Naunyn's surmise that vasomotor factors were responsible for the disturbance. That functional disturbance of the vasomotor control plays an important rôle is further supported by the pathologists, who were often unable to find adequate anatomic changes to account for the collapse and sudden death. Furthermore, in many of these cases the conditions of the pulmonary and systemic vessels could best be explained by vasomotor paresis. To this evidence was added the effect of the acute infections in animals. Heidenhain, Charrin and Gley, Raczynski,[5] and especially Romberg and Pässler,[6] studied the effect of a number of the more common micro-organisms on the cardiovascular system. These results are so in accord that it is only necessary to refer to a few of the experiments.

Cultures of a streptococcus obtained from a case of scarlatina, when injected into rabbits, produced cardiovascular disturbance, which can best be considered in two stages. Shortly after the injection, a slight and inconstant vasodilatation could be demonstrated, leading to a slight fall in the pressure; later with approaching death the blood-pressure falls, apparently the result of vasomotor disturbances, as the heart's strength is still good, as shown by the prompt rise in blood-pressure following compression of the aorta.

Cultures of the colon bacillus behaved somewhat differently, impairment of the heart being most pronounced. The pneumococcus and diphtheria bacillus behaved in the same manner as the streptococcus, paralyzing the vasomotor center, leading to engorgement of the splanchnic circulation and underfilling of the vessels of the brain, muscles and skin. Involvement of the heart only occurred late, and then apparently secondary to nutritional disturbances caused by the vasomotor paresis. Especially in pneumococcus infections the heart remained intact to the last, this being in accord with the absence of anatomic changes in this organ after death from pneumonia.

It would appear, therefore, from clinical, anatomic and experimental evidence that the circulatory disturbances in the acute infections are chiefly vascular in origin, the heart being affected to a much less marked degree.

ACTION OF ALCOHOL IN MAMMALS

Regarding the physiologic action of alcohol in mammals, the published results would appear to be quite at variance; these apparent differences can, however, be largely explained by the method of administration and especially the dosage. Considering these points and selecting only those experiments in which methods of precision have been used, we find that the results are really in accord.

A weak solution of alcohol 0.13 to 0.3 per cent. transfused through the mammalian heart has a stimulating effect. The strength of the solution necessary to bring about a certain effect cannot be fixed absolutely. Generally speaking, however, dilutions below 0.13 per cent. are inactive and above 0.3 per cent. act as a depressant. Computing the amount of blood in man as 7 per cent. of the body weight, in order to have the above minimum in the circulating blood, would require about 7 c.c. of absolute alcohol, and for the maximum amount about 15 c.c. of absolute alcohol, or 15 to 30 c.c. of whisky. We must bear in mind that when it is administered by mouth, the delay in absorption would prevent the entire amount ingested from appearing at one time in the circulating blood. When alcohol is administered intravenously to animals, it has been shown that an amount equivalent to 0.1 to 0.3 per cent. in the circulating blood raises blood-pressure and increases the systolic output without necessarily increasing the pulse frequency (Dixon,[7] Rosenfeld,[8] Hasovec,[9] Kochmann,[10] Wood and Hoyt[11] and Bachem[12]). This rise in pressure is rather transitory, ranging from two to twenty minutes. When larger doses are given, all agree that alcohol acts as a depressant. One point of considerable significance is that it is impossible to determine beforehand in any given animal either the minimum or maximum amount required for a stimulating action.

There is still considerable difference of opinion in regard to the cause of the rise in pressure after moderate doses. Whether due to direct stimulation of the heart, the direct effect on the vessel walls, or the effect on the vasomotor center has not been definitely determined. It is certain, however, that large doses of alcohol paralyze the vasomotor center.

CLINICAL EVIDENCE

The clinical evidence relating to the value of alcohol in the acute infections may be divided into two classes, one statistical and of personal impressions, the other careful bedside study, with measured amounts of alcohol, and determination of changes in systolic and diastolic pressure, pulse-rate, etc.

Regarding the value of statistical evidence, it is only necessary to glance back over the therapy in pneumonia during the past fifty years. Laennec believed that he had a specific in tartar emetic; the advocates of venesection had their day and it was only after Skoda demonstrated that the mortality was just as low or lower when bleeding was not used, that the profession discontinued it as a general measure. The supporters of both of these measures furnished statistics that possessed the appearance of evidence. Petrescu treated 2,215 patients with pneumonia with large doses of digitalis, with a mortality of only 1.7 per cent. Aufrecht reported a mortality of 2.6 per cent. in a series of 379 cases, treated with quinin hypodermically. Results equally favorable have been reported after aspirin, creosote and iodids in large doses.

It would appear that, if purely statistical evidence were all that was required to establish a therapeutic fact, there is here sufficient proof. The error lies in the manner in which the statistics have been collected. The mortality of pneumonia is largely dependent on the age of the individual, his previous habits, the severity of the epidemic and the stage of the disease in which he comes under observation. Petrescu used his digitalis treatment on recruits—all young and healthy men—in whom the mortality would naturally be low, as Risell by pure symptomatic treatment reported a mortality of only 1.8 per cent. in 127 patients between the ages of 20 and 30 years. Statistics bearing on the value of alcohol in the treatment of acute infections are too few to permit drawing conclusions, even if free from the objections referred to. Dr. John Hay divided a series of pneumonia patients into two lots by assigning every other patient to one group. Those treated without alcohol showed a mortality of 29.5 per cent.; those receiving alcohol 45.5 per cent. We have heard a great deal of the low mortality from pneumonia in the London Temperance Hospital, but the total number treated is too small to provide evidence.

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[3] Von Dubczanski and Naunyn: Arch. f. exper. Path u. Pharmakol., 1872, i, 181; 1882, xviii, 49.

[4] Maragliano: Ztschr. f. klin. Med., 1888, xiv, 309.

[5] Raczynski: Deutsch. Arch. f. klin. Med., 1897, lxiii, 27.

[6] Romberg and Pässler: Deutsch. Arch. f. klin. Med, 1899, lxiv 652

[7] Dixon: Jour. Physiol., 1906-07, xxv, 346.

[8] Rosenfeld (referred to by Bachem): Centralbl. f. inner Med, 1907, xxviii, 849.

[9] Hasovec: Wien. med. Wchnschr., 1901, lix, 457.

[10] Kochmann (referred to by Heinz): Handbuch der experimentellen Pathologie u. Pharmakologie, 1905, i, 985.

[11] Wood and Hoyt: Univ. Penn. Med. Bull., 1905-6, xviii, 70.

[12] Bachen: Centralbl. f. inn. Med., 1907, xxviii, 849

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A limited number of observations of this character have already been made, and although the results are somewhat at variance, as are the results of these same studies on the hearts of the lower animals, these differences can be explained largely by the dosage and the peculiarity of alcohol, that in the same amounts it does not always affect the cardiovascular apparatus in the same manner.

Studies on normal man show that he reacts to alcohol in the same manner as the lower animals. When given in such quantities that the amount in the circulating blood is not greater approximately than 0.15 per cent., or about 6 c.c. of absolute alcohol, little if any effect on the cardiovascular apparatus can be observed. When the quantity given is equivalent to from 0.15 to 0.3 per cent. in the circulating blood, equal to 6 to 12 c.c. of absolute alcohol, there is as a rule evidence of cardiovascular stimulation, as there appears, after a lapse of fifteen to twenty minutes, a moderate rise in blood-pressure, varying from 10 to 20 mm. (Kochmann, Binz, Wiesenfeld). A larger amount, equivalent to 40 c.c. of absolute alcohol, invariably acts as a cardiovascular depressant. Some investigators have been unable to detect a rise in blood-pressure, even with moderate doses (Cabot, Crile). The great difficulty in both animal and man is to determine in any single individual either the minimum or maximum amount required for a stimulating action.

In this respect it differs from other cardiac tonics, as with digitalis, for instance, we may be certain that a given amount will affect the mammalian heart in a characteristic manner. For this reason alcohol must always be an unsatisfactory therapeutic agent, as a remedy which in moderate doses may or may not have the desired effect, and which in somewhat larger doses develops an unfavorable action, is not to be relied on in an emergency.

Regarding the cause of the rise in blood-pressure following moderate doses, Dixon and Kochmann consider it due to constriction of the splanchnic vessels, the associated dilatation of the peripheral vessels failing to compensate for the splanchnic constriction. Wood and Hoyt confirmed this view, as they have shown by means of the plethysmograph that the peripheral vessels were dilated during the rise in blood-pressure, and inasmuch as the pulse-rate was not materially changed it could best be explained by constrictions of the splanchnics. This constriction of the splanchnic vessels, according to Dixon and Kochmann, is due to stimulation of the vasomotor center.

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Carefully conducted studies on the effect of alcohol in the acute infections in man have recently been made by Dennig, Hindelang and Grünbaum.[13] The care with which these observations have been made render them more convincing than the entire mass of conflicting, inaccurate clinical reports.

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The second group, consisting of nine patients, including five suffering from pneumonia, received from 11 to 20 c.c. Two pneumonia patients reacted by a slight rise in pressure and increased systolic output; in the remaining seven patients the blood-pressure fell and the systolic output was decreased. The third group, including 25 patients, received, well diluted, an equivalent of 20 to 30 c.c. of absolute alcohol. All but five of these patients gave evidence of the depressing action of the alcohol. Included in the five cases that gave a slight rise in pressure were one pneumonia and one erysipelas. Still larger doses, equivalent to 30 to 40 c.c. of absolute alcohol, were administered to a group of seven febrile patients and all reacted by a fall in pressure and lessened systolic output.

Summarizing this experiment, those patients receiving 6 to 10 c.c., 70 per cent., 10 to 20 c.c., 77 per cent., 20 to 30 c.c., 80 per cent., 30 to 40 c.c., 100 per cent., reacted by a fall in pressure and lessened systolic output. These results on the whole are in accord with those of Cabot, who was unable with varying doses of alcohol to demonstrate in febrile patients a rise in blood-pressure.

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The above results, like the animal experiments, impress us with the uncertainty of the reaction of the individual to alcohol; as even in small doses it may, and in large doses invariably does, depress the circulation. It is fair to assume that in these conditions drugs like camphor, caffein and digitalis are of much more value, as they are more constant in their action and much less liable to affect the patient unfavorably.

SUMMARY

In the circulatory disturbances of the acute infections, impairment of the vascular regulating mechanism is more apparent than active disturbance of the heart, and therapeutic measures should be directed toward the prevention or correction of these vasomotor disturbances. Alcohol in man and the lower animals, when taken in small amounts, frequently acts as a cardiovascular stimulant. The exact method of action is still disputed. Larger amounts of alcohol in individuals not addicted to its use, invariably act as a cardiovascular depressant by paralyzing the vasomotor center. The border-line between the amount acting as a stimulant and the amount having a depressing action is variable, and this variability in action renders alcohol an undesirable therapeutic agent.

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ABSTRACT OF DISCUSSION

DR. RICHARD CABOT, Boston: In the use of alcohol in these circulatory disorders there is the difficulty of knowing whether one is dealing with alcohol or with a variety of other substances combined with alcohol in the substance known as whisky. When I began to work with alcohol experimentally I tried to use absolute alcohol and it has been said that the use of absolute alcohol in connection with acute disease is advantageous. So far, I have been unable to get any considerable number of patients to take absolute alcohol, either diluted, flavored or in any other way. They objected so strongly that, in my hands, its use has been impractical. Therefore I have had to use that very uncertain mixture known as whisky and all my results in blood-pressure work with whisky have been, therefore, not properely attributable to the action of alcohol. If anyone has found any way in which he can so flavor absolute alcohol to make patients take it without objection I would like very much to hear of it.

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MAGNESIUM POISONING

A STUDY OF TEN CASES *

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INTRODUCTION

The salts of the Glauber salt group are characterized by the difficulty with which their solutions are absorbed from the gastro-intestinal tract. The most important members of the group are the sulphates of sodium and magnesium.

Both Glauber salt and Epsom salt are easily soluble in water. When these salts are taken into the system in dilute form their solutions pass through both the small and large intestines practically unchanged, because the tendency to absorption is so slight that under these conditions the solutions are virtually non-absorbable and because the salts prevent the absorption of any water which was used to dissolve them. Such solutions passing unchanged through the entire bowel produce their effect in part by simply washing out its contents and partly by their local irritant action on the intestinal wall.

In 1884 Hay[1] showed that the tendency to absorption of Glauber salt is increased by raising the concentration of the solution, and when, in the course of his experiments on animals (the intestinal tract of which was free from fluid) he gave the salt by mouth, he found that large quantities of the dry salt produced no catharsis whatever, while the same doses given in dilute solution invariably produced copious movements. The dry salt was gradually absorbed from the gastro-intestinal tract into the blood and was excreted by the kidneys.

Beginning with concentrated solutions of Glauber salt, Gummilewski[2] found that the addition of water steadily diminished the tendency to absorption. Continuing the dilution, he reached a point below which absorption was reduced to a minimum; from this point on there was practically no absorption down to solutions of 1 per cent. and less. With its slight tendency to absorption the dilute salt solution does not normally remain in the intestine long enough to allow an appreciable amount of the salt to be taken up; if, however, a Glauber salt solution cannot readily leave the bowel on account of mechanical obstruction, or because peristalsis is much diminished or absent, then even a dilute solution will undergo gradual absorption, and there will be no catharsis. In the normal bowel the degree of dilution of an active Glauber salt solution has no bearing on the efficiency of the catharsis produced, a 2 per cent. solution being as effective as a solution containing 5 per cent of the salt, provided, of course, a sufficient quantity of the solution is given in each case.[3]

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The question whether or not these salts by their presence in the intestine are capable of abstracting water from the system is still undecided, the experimental evidence on this subject being contradictory. According to Schmiedeberg[4] it is very unlikely that such abstraction should take place under normal conditions. If it ever occurs, Schmiedeberg[5] thinks, it will be most likely to happen when the system contains an excessive amount of water, as in cases of general edema, ascites, hydrothorax, pleurisy with effusion, etc. Certain experimental work which I have done on this subject is corroborative of Schmiedeberg's theory. The results of these experiments are to be published in a later paper, together with the results obtained from a quantitative experimental study of the absorption of Epsom salt given in varying concentrations.

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The medical literature gives no information concerning the conditions governing the absorption of magnesium sulphate from the gastro-intestinal tract, but the histories in the cases of poisoning by the internal administration of Epsom salt and the results I obtained in my experiments both give evidence to the effect that magnesium sulphate closely resembles sodium sulphate in every particular relating to its behavior after ingestion. Theoretically, therefore, we should expect to find that concentrated solutions of magnesium sulphate are absorbed in part from the stomach and intestines into the circulation, and that when a sufficient amount of magnesium is present in the circulating blood at any one time magnesium poisoning will result.

When magnesium salts are injected into the blood of animals a very characteristic intoxication is produced.[6, 7] The pulse, at first somewhat accelerated, soon becomes slower and slower, until the heart stops in diastole shortly after paralysis of the respiration. The respiration is affected from the start. The reflex irritability is lost twenty minutes after the beginning of the injection and it may still be absent for an hour and a half after respiration has returned to normal. The peripheral motor nerve endings are paralyzed, but where recovery occurs voluntary movements return long before reflex irritability is restored; 0.3 to 0.5 gm. per kilo body weight, given intravenously, produces death in dogs. Subcutaneous application produces qualitatively the same symptoms, but much larger doses are necessary to cause death. On section of the animals Recke[7] found subpleural ecchymoses and extravasation of blood into the pleural cavities.

The work of Meltzer[8] seems to indicate that magnesium salts may produce intoxication through cumulation. I, too, have found the excretion of magnesium sulphate through the kidneys to take place so slowly that if small doses of Epsom salt in concentrated solution are given at short intervals cumulative poisoning may result.

If magnesium absorbed into the blood in sufficient quantity was the cause of intoxication in the cases I shall describe we may expect these cases to show symptoms and autopsy findings resembling those obtained in animals by the intravenous application of magnesium salts.

Of the ten cases which I shall discuss, reports of seven are to be found in the literature; two of the other three cases I have observed personally; the report of the third case I obtained from the records of the Massachusetts General Hospital.

REPORT OF CASES

Case 1.[9]—J. A., 31, Italian, married, second pregnancy, was brought to the hospital on January 22 with a history of having had no movement of the bowels for three days. The patient looked very sick, her respirations were slow and labored, but both the temperature and pulse were only 100. From time to time she vomited yellow watery matter. The uterus, at full term, lay in the right side of the abdomen; it contracted regularly every ten minutes. The left side of the abdomen was puffed up by a distended intestine; there was no visible peristalsis. The examination of a catheter specimen of urine showed the following: Quantity 125 c.c., specific gravity 1,080, no albumin, no sugar. Two glycerin enemas low were given without result. An oil enema gave result from lower bowel. A high turpentine enema gave a good result, relieving the distention. Operation was done for removal of an ovarian cyst. In the urine, which was submitted to me for examination, I found a total of 0.6620 gm. of magnesium, calculated as oxid, and corresponding to 1.95 gm. of magnesium sulphate.

It was impossible in this case to obtain a history of the patient before entrance. Undoubtedly she had been given Epsom salt by her physician, but on account of obstruction of the bowel by the ovarian cyst the salt solution was not permitted to pass out of the intestine; consequently absorption of magnesium sulphate took place. After absorption into the blood the Epsom salt tended to increase the obstipation by paralyzing the bowel.

Case 2.[10]—H. M., 60, chore-man. Diagnosis, chronic bronchitis and emphysema with acute exacerbation; chronic myocarditis.

Patient on entrance passed 30 to 35 ounces of urine, the examination of which gave the following: Odor and color normal, acid, specific gravity, 1,022, albumin, slightest possible trace, sugar absent, no casts. April 14 to 15, the urine rose to 2,940 c.c.; on April 17, it fell to 1,860 c.c., and on April 18 to 480 c.c. On April 14 magnesium sulphate, 1 ounce in concentrated solution every morning was ordered.

April 16, the patient was much more comfortable as a result of rest in bed. He ran an irregular temperature, normal in the morning and up to 101 F., in the afternoon. There were many moist râles and squeaks in the lungs.

April 18 the following information was obtained from Dr. Marks, the junior house officer, and from the nurse in charge of the patient: The patient felt poorly the morning previous. He vomited his salts; his pulse was weak and irregular; he became progressively weaker. His respiration, affected from the start, became more and more labored, and finally resembled Cheyne-Stokes respiration without the periods of apnea. The patient was very cyanotic. His condition seemed so serious that he was placed on the dangerous list.

My attention was called to this case by Dr. Duke, one of the house physicians, who brought me a specimen of urine with a specific gravity of 1,070, and it was in answer to my inquiry regarding the case that I received the above history. I immediately advised the discontinuance of magnesium sulphate for this patient because I was led, from my experience with Case 1, to suspect magnesium sulphate as being the cause of the high specific gravity of the urine. Fortunately the patient had received no salts that morning on account of his weak condition.

April 24 the heart action was less irregular; lungs still showed many coarse râles; temperature still slightly elevated; patient up without ill effects.

The chemical analysis of the 120 c.c. specimen of urine obtained, yielded 0.4813 gm. of magnesium calculated as oxid, and corresponding to 1.42 gm. magnesium sulphate.

In my opinion this case is one of cumulative poisoning produced by a partial absorption of the doses given on

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[5] Schmiedeberg: Grundriss der Pharmakologie, 1906, p. 416.

[6] Clessin: Ueber die giftige Wirkung der Magnesium Salze Diss., Würzburg, 1881.

[7] Recke: Experimentelle Beiträge zur Kenntniss der Wirkung der Magnesia sulphurica, Diss. Göttingen, 1881.

[8] Meltzer and Auer: Physiological and Pharmacological Studies of Magnesium Salts, Am. Jour. Physiol., 1905-1906, xiv, 366.

[9] Boston Lying-In Hosp. Rec., 1909, cxlvii, 198.

[10] Mass. Gen. Hosp. Rec., 1909, dccxvii, 71.

April 14, 15 and 16. The salt given on April 17 served to hasten the onset of the attack.

CASE 3.[11]—E. I. B., aged 26, milliner, diagnosis, tapeworm. May 23, on entrance to the hospital patient's urine showed a specific gravity of 1,008, albumin, slightest possible trace, no sugar. Patient was put on liquids without milk, and was given 5 grains of calomel that evening.

May 24, the patient was given 7 ounces of Epsom salt, 1 ounce every hour and a half during the morning, with excellent result. No vomiting.

May 25, patient vomited two doses of the salt. There was nausea the rest of the day. Urine, specific gravity 1,029, albumin slightest possible trace. Stool, normal in color, formed, eggs and segments of tenia present.

May 26, patient vomited two doses of salt. She was allowed to rest as quietly as possible, with the hope of beginning treatment.

May 27, patient vomited her medicines; she refused all food and drugs, except teaspoonful doses of albumin water and was beginning to look worn and haggard. She was fed by rectum and given enemas of salt solution. These enemas she retained well.

May 28, all idea of treatment for worm was given up; patient vomited even water. Physical examination was negative except for acne, which appeared two days previously.

May 30, condition of pernicious vomiting continued. Patient was able to retain only teaspoonful doses of milk and lime water or albumin water, and she often vomited these. The vomitus was green and slimy. The patient looked pale and drawn. The pulse was good, the temperature normal. The patient was sleepy most of the time; she lay with eyes closed and hardly seemed to notice what was going on. The nausea was unrelieved. Patient said she could not move her limbs; she thought she was paralyzed. The patient's face was puffy. She was restless and querulous during the night.

The urine was pale, slightly cloudy, specific gravity 1,013, slightest possible trace of albumin casts present. The urine seemed much diminished; patient thought she had not passed any urine for several days, but the nurses thought that she had passed some urine with her stools and when she discharged nutrient enemas.

May 31, at 5 a. m. the pulse suddenly became weak; a few minutes later the house physician found patient pulseless and of a dirty ashen color. The patient was conscious when the heart was merely fluttering. Death occurred at 6 a. m.

Autopsy (M. G. H., Pathological Records, 1906, p. 273; autopsy 1,694).—Pleural cavity contains a slight amount of pale fluid. Peritoneal cavity contains a moderate amount of pale fluid and several pale yellow fibrin clots. Stomach and small intestinal mucosa shows patches of reddening. Kidneys weigh together 320 gm. The epithelium of the cortical tubules is generally flattened, the lumen of the tubules is rather larger than normal. The interstitial tissue is edematous in places. The epithelium of the glomerular capsule is thicker than usual, but there is no evidence of a glomerulo-nephritis, and there is no increase in interstitial tissue. The appearance of the kidney suggests the action of some toxic substance.

This case is undoubtedly one of magnesium poisoning. Unfortunately the urine was not examined for the presence of the salt, but the specific gravity of the urine of May 25 tells the story. At entrance the urine showed a specific gravity of 1,008; on May 25 the specific gravity was 1,029, although the patient had been taking practically no food. On May 31, when nearly all of the salt had been excreted, the specific gravity was 1,013. I have no doubt that specimens with a much higher specific gravity were passed in the twenty-four hours following the voiding of the specimen which was obtained on May 25. This specimen was passed at a time when the excretion of the salt was just beginning. This is another case of cumulative poisoning.

CASE 4.—Under the title, "Epsom Salt as a Poison," C. Fraser[12] reports a most interesting case of magnesium poisoning. A boy, aged 3½ years, took 1½ ounces of magnesium sulphate, mistaking the salt for sugar. On account of the bitter taste he drank a little milk to wash it down. The child's mother found him soon after this, retching and suffering much pain. He complained of great thirst; his bowels had not moved. The nausea and retching continued all day. At 7 p. m. the pain was very severe and vomiting began. The patient suffered great pain all through the night and vomited at frequent intervals. When Dr. Fraser first saw the child at 2:30 p.m. it was twenty-five hours after he had taken the salts. He found the boy in bed with his face pinched, his eyes sunken and the skin very pale. His mind was clear. Every 2 minutes he had a colicky attack which made him draw up his legs. Temperature 100 F., pulse small, 160. Respiration labored. His tongue was very dry, the *papillæ* standing out prominently. His thirst was intense. There had been no movement of the bowels in twenty-four hours. The patient had passed only a half ounce of urine in twenty-four hours. Physical examination showed the abdomen to be distended and rigid, and the skin hyperesthetic. Catheterization yielded ½ ounce of bloody urine, no albumin and no sugar, very acid. The patient was weak and was constantly growing weaker. He vomited every few minutes small amounts of greenish-yellow material without any characteristic odor. The bowels were constipated, temperature and pulse the same.

Next day, vomiting was incessant as before, no movement, no urine, pulse uncountable. The abdomen was so distended and tender that it was feared the boy had peritonitis. He was therefore admitted to the hospital for laparotomy. The child was now in complete collapse, his temperature was subnormal, his pulse 160, the abdomen rigid and retracted. Laparotomy was done and two pints of sterile blood-stained serum obtained from the peritoneal cavity. No cause for intestinal obstruction to be found.

The first twenty-four hours in the hospital the temperature was 100.6 F., pulse 170; child was very ill and restless; he vomited frequently; no flatus or feces were passed in spite of frequent enemas. The child complained of intense thirst. Considerable quantities of blood-stained serum continued to drain from the peritoneal cavity. The dressing was changed every four hours. The child became moribund, and albumin water, brandy and rectal salines were not retained.

The second twenty-four hours the child still seemed moribund; pulse uncountable. Normal saline solution was infused into the subcutaneous tissue of the axilla, after which the child improved, obtaining some sleep. There was still some vomiting, which, however, soon stopped. Half grain of calomel was given every hour. Temperature 101.5 F. In the afternoon flatus and feces passed and again after an enema. Catheterization at 4 p. m. yielded 1 ounce of urine. Recovery now followed quickly.

In this case the action of the salt after absorption into the blood had caused paralysis of the intestine. The slow excretion of the salt was also responsible for the almost complete suppression of the urine, the salt, by its great affinity for water, preventing the excretion of water by the kidneys.

CASE 5.—Neale[13] reports the case of a boy, aged 15, who took 1 ounce of magnesium sulphate in concentrated solution on an empty stomach. The physician arrived after twenty-four hours. In the meantime the boy had had three small movements. A few hours after the dose he felt sick and vomited; this condition continued through the night. The next day he tried to work, but had to give up. The vomiting continued at intervals. When the physician came the patient was lying in an attitude of flexion; he was much cyanosed; from time to time he had severe attacks of tetanic spasms, affecting the right side of the face and the right arm. The urine was dribbling. The pulse was imperceptible. He frequently vomited greenish fluid material. His temperature was 105 F. The next day he was better; 40 ounces of urine were withdrawn by catheter. He was well in a week.

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[11] Mass. Gen. Hosp. Rec., 1906, dcxl, 122.

[12] Fraser, C: Lancet, London, April 24, 1909, p. 1174.

[13] Neale: Pharm. Jour., 1896, p. 235.

In this case there was evidently a paralysis of the sphincter of the bladder. The tetanic convulsions are an interesting symptom. Two of the ten cases showed convulsions.

Case 6.[14]—A woman in Dundee, Scotland, took 4 ounces of Epsom salt in concentrated solution at one draught. Half an hour later she felt so ill that she sent for a physician. An hour later she died. There was no purging. These are all the facts obtainable in this case, except that death was certified to as due to paralysis from an overdose of salts. There was no inquest.

The cause of death as given in the physician's certificate suggests that there was motor paralysis in this case.

Case 7.—Luff[15] reports the following case: A woman servant aged 20 was found on her bed in the morning. The bed had not been slept in. Death had occurred some hours before. The autopsy was negative except for the presence of a light-colored semifluid mixture of water and magnesium sulphate in the stomach. Death was stated to have been caused by syncope. There was no purging. The salts had been taken on an empty stomach. It was learned later that the young woman had purchased 1 ounce of Epsom salt the day before from a neighboring apothecary.

Case 8.—Sang[16] reports the case of a woman of 35 who took 4 ounces of Epsom salt in warm water to bring on the monthly period. Immediately after taking the salts she felt a burning pain in the stomach and bowels. Her breathing became difficult, she had a choking feeling, also a sensation as if the power were leaving her legs. There was no vomiting and no purging. Her pulse was 98 F.; the pupils were dilated; at times there was slight twitching of the face, but complete paralysis rapidly ensued, the patient became comatose and died seventy-five minutes after taking the salt. The radial pulse was felt for two to three minutes after respiration had ceased. There was no autopsy.

This case is one of the most typical of the ten. It shows the paralysis of respiration in a truly classical manner; also the final complete motor paralysis. Like the third of my cases, the victim in this case spoke of a sensation as if the power were leaving her legs. If Patient 3 had lived longer motor paralysis would probably have developed in her case also. In connection with this case it is interesting to note that Lewin,[17] reporting Case 8 in his text-book on toxicology, expresses his doubt of its being a case of magnesium poisoning because the victim was not purged.

Case 9.[18]—A boy aged 10 was given 2 ounces of Epsom salt for worms. The salt was partly dissolved and partly mixed in a cupful of water. Immediately after swallowing the mixture he staggered and fell. Half an hour later the physician found him breathing slowly and with difficulty. The pulse was imperceptible and the boy was in a condition of collapse. He died in forty minutes. There was no vomiting or purging. The autopsy was negative.

This case is remarkable for the suddenness of the onset, which is strongly suggestive of rapid absorption from the stomach.

Case 10.[19]—An old man who was rather a heavy drinker was the victim of a practical joke. A number of his companions put a large quantity of Epsom salt into his beer. After he had drunk several pints he was suddenly seized with violent purging. He died forty-eight hours later. The autopsy showed the mucous membrane of the gastro-intestinal tract to be inflamed.

The victim in this case may have died in consequence of the violent purging alone.

CONCLUSIONS

In one of these cases only, that reported by Taylor, active purging took place. The victim in this case was given Epsom salt in several pints of beer; the beer served to produce a dilute solution which escaped absorption, and therefore caused powerful catharsis. In Case 3 there is said to have been a good result after the seven doses of Epsom salt, but probably the patient drank with some of her doses of salt an amount of water sufficient to so dilute the salt that it was not absorbed. The patient in Case 4 is reported to have had three small movements. In all the other cases there was no catharsis; the salt, which was taken in concentrated solution, caused paralysis of the bowel after its absorption into the blood. This paralysis was so marked in Cases 1 and 4 that laparotomies were performed.

In all cases there was also a diminution of the urine, which in some cases amounted almost to anuria. The effect on the urinary secretion is due to the presence of the salt in the blood and tissues. On account of its great affinity for water the salt converts a large part of the body fluids into an Epsom salt solution, which, being itself excreted only very slowly, holds the water back and reduces or prevents the secretion of urine.

Among the symptoms observed the paralyzing effect of the salt on the respiration was very prominent; it was spoken of in six cases. Convulsions, described as tonic in character in Neale's case, were seen in Cases 5 and 8. Dilatation of the pupils was observed in Cases 4 and 8. Motor paralysis was seen in Cases 6 and 8, and paralysis of the reflexes seems to have been present in Cases 3 and 8. Vomiting occurred in about one-half the cases.

The most characteristic findings disclosed by operation or autopsy are patches of reddening on the mucosæ of the stomach and intestines and free fluid in the abdominal and pleural cavities (Cases 3, 4, 10).

Fraser's case (4) suggests one very efficient remedial measure, namely, infusion with normal saline solution. The saline infusion given the child undoubtedly saved his life. I think, however, that intravenous application is preferable to intramuscular or subcutaneous infusion, because the relief of the patient will be more prompt and the chances of saving life will be better. The fluid introduced probably acts by diluting the Epsom salt so as to render it less toxic; the more dilute solution is also excreted more rapidly by the kidneys. Meltzer's[20] experiments on animals suggests a specific antagonistic action to magnesium on the part of calcium salts. The intravenous or subcutaneous application of lime salts may therefore be of great value in the tratement of magnesium poisoning.

On account of its paralyzing action on the reflex centers of the cord Meltzer[21] has advised the subcutaneous use of magnesium sulphate in cases of tetanus. Such application should be made with the greatest care only. I can conceive of the remedy being quite as bad as the disease.

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14. Brit. Med. Jour., 1891, ii, p. 490.
15. Luff: Brit. Med. Jour. 1891, ii, 490.
16. Sang: Lancet, London, Nov., 7, 1891, p. 1037.
17. Lewin, Lehrbach der Toxicologie, 1897, p. 99.
18. Christison: On Poisons, p. 574.
19. Taylor: Poisons, p. 4.
20. Meltzer, and Auer: Am. Med., 1905, x, 916.
21. Meltzer: Inhibitory and Anesthetic Properties of Magnesium Salts, Med. Rec., New York, 1905, lxviii, 965.

SUMMARY

1. Magnesium sulphate in bulk or in concentrated solution is absorbed, in part at least, from the gastro-intestinal tract into the blood.

2. If a sufficient amount of the salt is absorbed at a given time poisoning will result; of the ten cases reported six resulted fatally. The symptoms and autopsy findings in these cases agree very well with those obtained in animals after the intravenous application of magnesium sulphate.

3. On account of the slowness of its excretion from the system, magnesium sulphate, given repeatedly in concentrated solution, may produce poisoning by cumulation.

4. In normal conditions of the bowel magnesium sulphate, in proper dilution, is a valuable cathartic; Hunyadi water, for example, is practically a 3 per cent. solution of Epsom salt (magnesium sulphate 1.5 per cent., sodium sulphate 1.5 per cent.)

5. It is not wise to give magnesium sulphate indiscriminately in cases of so-called acute intestinal obstruction, because when peristalsis is much diminished or absent, and in cases of mechanical obstruction of the bowel, even dilute solutions will be absorbed, with consequent danger of poisoning.

6. In cases of suspected magnesium poisoning large quantities of normal salt solution should be given intravenously. Dilute solutions of lime salts given hypodermically may also be of benefit.

7. The subcutaneous use of magnesium salts to produce catharsis, as proposed by Wade,[22] is not only absolutely irrational, but dangerous.

374 Marlboro Street.

ABSTRACT OF DISCUSSION

Dr. Philip S. Roy, Washington, D. C.: Wolfgang Pauli of Vienna, about 1905, in discussing sulphate of magnesia and some of the other powerful purgatives called attention to their danger. Pauli says that the purgative action of sulphate of magnesia is due to its irritating and caustic action on the tissues, also to a rise in blood pressure. The ion relations of the sulphate of magnesia to protein are similar although not so powerful as those of the bichlorid of mercury. Pauli's article impressed on me forcibly the idea that care should be used in giving the sulphate of magnesia.

Dr. Nathan Rosewater, Cleveland, Ohio: Magnesium citrate is the form of magnesium salt which I give when I wish to produce catharsis. I prescribe it in concentration equivalent to one and one-third ounces of the salt in from four to six ounces of water. In my experience of many years, I have never seen such effects as described by Dr. Boos. It seems to me that one of the cases he reported should be ruled out because the effect was so immediate; absorption can hardly take place so fast as is indicated in his description of the case. In the other cases too I think that the results must have been due to something else than the magnesium, perhaps to the condition for which the drug was given. In only one or two cases do I believe that the Epsom salts seem to have had anything to do with the poisonous results. I have had a large experience with the use of the salts of magnesium and I have never encountered any untoward effects whatever, and have preferred a concentrated solution. It would require more than the report of two cases to make me believe that this agent is a poison, instead of having merely been used in cases with a toxic or fatal ending.

Dr. H. E. Dunlop, Canton, Mo.: It has been my experience, as I am sure it has been of the majority of physicians present, that magnesium sulphate is not at all toxic, at least in the dose usually administered. Does not Dr. Boos believe that idiosyncrasy had much to do with the results reported in his paper?

Dr. D. C. Walt, Little Rock, Ark.: Magnesium sulphate is a valuable agent because of its affinity for carbon which exists in all ptomain bodies. It seems to have the power of neutralizing the toxic value by drawing to its embrace the carbon which is the basic element in poisonous compounds, whether it is the CHNO or CHO group. Nature handles the animal economy on a general plan and that plan is modified or influenced by certain conditions. I dislike to hear anything said against magnesium sulphate because it is one of the most commonly used and cheapest drugs and also one of the most valuable in medicine to-day. With regard to the toxic condition, we must remember that in the snake and in the wasp the toxic effects are based on natural laws, and the toxic effects are regulated by a relation to carbon. I have had a personal experience with this agent as well as in my practice. I have a chronic affection which has been diagnosed as epithelioma, and I have used magnesium sulphate every day for over five years.

Dr. Louis Leroy, Memphis, Tenn.: The report of these cases is extremely interesting and I think they are sufficiently numerous to warrant consideration. What has been stated does not strike me as being a plea to discredit the giving of magnesium sulphate by any means; we must remember, though, that there are certain cases which result unfavorably after the administration of this agent. There seems to be no question but that a solution of magnesium sulphate cannot produce any toxic effects unless the metal in some way unites itself with some other substance. Idiosyncrasy is not usually a question of concentration, but of substance. It seems that it is only when in great concentration that magnesium sulphate is injurious, so that this would seem to argue against idiosyncrasy as being responsible for the unsatisfactory results. On the other hand, I believe that there is very little general toxic action resulting from the administration of magnesium sulphate. The question then arises: Is there not some other toxic material linked with the magnesium and which is absorbed at the same time through the intestines? That would be my interpretation of the cases reported by Dr. Boos. I should say that his cases were the unusual ones; possibly there was an incompletely digested material, or possibly the production of some ptomain substance, which was absorbed and thus caused the poisonous effect. These possibilities must be borne in mind and the report of but one or two instances of supposed poisoning from the administration of sulphate of magnesium should not be accepted as a statement that this is the sole poisonous agent.

Dr. John D. Reid, Pilger, Neb.: I should like to report a case which came to my attention last month, but which was not in my practice. The wife of a blacksmith had not been feeling well for several hours. Thinking that it would do her good, the husband gave her a dose of Epsom salts. Within one hour the woman was dead, whether from magnesium poisoning or not I do not know. Her husband was arrested for murder and the preliminary trial is to be held soon.

Dr. W. H. Philp, St. Francis, Ark.: These reports of deaths from the administration of common, everyday salts are interesting, and recall to my mind the case of a woman who was operated on for a minor gynecologic condition. Two or three days afterward she was given a small dose of salts, not more than 4 drams, and she was dead in one and a half hours, after having just such a set of symptoms as Dr. Boos has described. The case was then recognized as one of magnesium poisoning, but this is the first time it has ever been reported.

Dr. George R. Neff, Farmington, Iowa: I have been using magnesium salts for years, and have never been so successful with them as I have during the last five or six years. I use magnesium internally and externally and expect to use it eternally. I think the sulphate of magnesium is one of the best agents we can use externally for the relief of pain, especially when used with phenol in the proportion of water 16 ounces, salts 1 ounce, phenol 10 drops. In the pleuritic pains in pneumonia, for instance, if this mixture is applied over the chest there are good results. In a knee joint affected with rheumatism, its action is like magic. Think of giving 7 ounces of sulphate of magnesia at one dose! Why should we not get toxic effects from such dosage? It should be remembered that we get toxic effects from medicines, just in proportion as carbon is contained in them. The more carbon the more toxic they are. Epsom salts are eliminative, given in proper doses. Take a case of bronchitis with a continuous hacking cough, and distress; using the following prescription: Epsom salts 3 drams, saccharin 3 grains, tincture of peppermint 10 drops, water 3 ounces, one teaspoonful every hour, the finest results are obtained. It will loosen the dry hacking cough and make a free discharge of mucus and all the symptoms will be relieved. If I had to make a choice of one medicine alone in the whole materia medica to-day, I would choose Epsom salts.

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[22] Wade: Med. and Surg. Reporter, 1894, No. 4.

Dr. William F. Boos, Boston: I wish it to be distinctly understood that I would not have physicians discontinue the use of magnesium sulphate; I think it is one of the best drugs for the hospital, because it is cheap and efficient in action. But the salt should be given in proper form. Whenever magnesium sulphate is given in greater concentration than 6 or 7 per cent. it is absorbed in part and may produce intoxication. In one case in which the 24-hour urine was examined after the patient had received 1 ounce of magnesium sulphate dissolved in 3 ounces of water (a 33.3 per cent. solution), the urine was found to contain 104 per cent. more magnesium, calculated as oxid, than was normally present. In another instance in which Epsom salt was given in 13.3 per cent. solution, that is, 1 ounce magnesium sulphate in 6 ounces of water, the urine contained 60 per cent. more magnesium than normally. When, however, magnesium sulphate is given in 5 or 6 per cent. solution, that is, ½ ounce magnesium sulphate to 9 ounces of water, there is catharsis and none of the salt appears in the urine.

The last case I reported is probably not one of uremia, because the convulsions in uremia are clonic and not tonic in character. In one case the specific gravity of the 3-ounce specimen was 1,070, it was free from sugar and it contained the equivalent of 1.4 grams of magnesium sulphate. There is no doubt that this was a case of magnesium poisoning and that the high specific gravity was due to the Epsom salt. It is only when we find an excess of magnesium in the urine that we can be certain that the salt was absorbed into the blood and that it was the cause of the intoxication. When the specific gravity of the urine is 1,070 or 1,080, as in the cases reported, or when it is above 1,030 in sugar-free urines generally, this form of intoxication should be thought of. It was only by accident that I found there was such a thing as magnesium poisoning. Magnesium sulphate was injected into the spinal canal by a man in Boston; the patient recovered consciousness about twenty-four hours later. I think it has not been given since. To produce intoxication this agent must circulate in sufficient quantity in the blood. In the cases enumerated, it was absorbed into the blood from the gastrointestinal tract, and the effect is the same as when it is injected intravenously; in both cases we get symptoms typical of magnesium poisoning. Magnesium sulphate should be given well diluted; 1 to 18 is the proper dilution; that is, ½ ounce of the salt dissolved in 3 ounces of water, followed immediately by a glass of water. Such administration will produce prompt catharsis without absorption. In certain hydremic conditions with edema or with fluid in the peritoneal or pleural cavities, even a concentrated solution is not absorbed. I have the records of one autopsy at the Massachusetts General Hospital. The peritoneal and pleural cavities of this patient contained a small amount of fluid and some fibrin clots, the epithelium in the tubules of the kidney was flattened and the interstitial tissue was edematous; there was no evidence of a glomerulo-nephritis, however. The condition of the kidneys suggested action by some toxic material. We do not know how quickly the salt may be absorbed from the stomach, very little being necessary to cause severe symptoms. Idiosyncrasy must always be considered as a possible factor. I do not believe it wise to give magnesium sulphate in cases of intestinal obstruction; in such cases there is a greater tendency to absorption and the longer the salt remains in the bowel the more will be absorbed.

THE DIFFERENT FORMS OF MEDIASTINAL PLEURISY WITH REPORT OF THREE CASES *

ANDERS FRICK, M.D.
Attending Physician Augustana Hospital
CHICAGO

DEFINITION

By mediastinal pleurisy, anatomically speaking, we understand, of course, an inflammation of the part of the parietal pleura which covers the mediastinum, the anterior as well as the posterior. But when we speak of mediastinal pleurisy as a clinical entity we differentiate it as a particular form of pleurisy, not merely because the mediastinal pleura happens to be inflamed, but because in certain clinical aspects it differs radically from ordinary pleurisy. This difference is, however, present only in those cases in which the inflammation of the mediastinal pleura leads to the formation of an encysted gathering of exudate between the mediastinum and the internal surface of the lung. In the following description I shall therefore confine myself to cases of this kind, with exclusion, for instance, of cases in which the inflammation of the mediastinal pleura is a pleuritis sicca, or, if exudative, occurs in conjunction with inflammatory changes in the rest of the pleura with free communication between the different parts of the pleural cavity.

It is owing to the proximity of the mediastinum and its organs that mediastinal pleurisy differs in symptomatology, in diagnosis, and in prognosis from ordinary pleurisy. The characteristic symptoms of mediastinal pleurisy vary, however, according to what part of the mediastinal pleura is involved. A gathering of fluid in front of the right pulmonary peduncle does not give the same symptoms as one in front of the left, and both these forms of mediastinal pleurisy differ in their clinical manifestations from those produced by a gathering of fluid behind the pulmonary peduncle, which, on the other hand, is liable to give the same symptoms, no matter whether it is located on the left or the right side of the posterior mediastinum. We may therefore distinguish between three forms of mediastinal pleurisy: (1) pleuritis mediastinalis anterior sinistra, (2) pleuritis mediastinalis anterior dextra and (3) pleuritis mediastinalis posterior.

It will be my endeavor in this paper to show the justification and the importance of such a distinction.

PLEURITIS MEDIASTINALIS ANTERIOR SINISTRA

Out of the eleven cases reported of left anterior mediastinal pleurisy, seven are described with sufficient detail to give us a comprehensive picture of this form of pleurisy.

Andral's Case 1.[38]—A man of 29, infected with tuberculosis, suddenly had an acute pain between the left breast and sternum with intense anxiety; the countenance was pale, the breathing short and hurried, the pulse hard and frequent. Six days later, a dulness was found between the left breast and the sternum, where respiratory murmur was absent and heart-sounds were weak. The dulness spread over almost the

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* Owing to lack of space, this article is abbreviated in The Journal by omission of the historical review and the references to literature. The article appears in full, however, in the Transactions of the Section and in the author's reprints.

entire precordial region and Andral made the diagnosis of effusion in the pericardium. The patient died on the twenty-first day. At the autopsy, the pericardium was found normal, but immediately behind the sternum and the anterior ends of eight or nine left ribs was found a vast cavity formed entirely at the expense of the pleura; it was filled with thick pus and lined with thick false membranes which were studded with numerous tubercles. In discussing this case, Andral points out that there was not much dyspnea, except at the commencement, due to the intense pain, and that death was occasioned not by embarrassment of the respiration, but by the infection, tubercles having been found in most of the internal organs.

Richardière's Case.[9]—A woman had been sick for two months, complaining of constant oppression and attacks of dyspnea. On admission to the hospital, flat percussion-tone was found over the entire left anterior side of the chest with absence of breath-sounds and vocal fremitus and with distant heart-sounds. The oppression grew more intense and she died a month later suddenly. Autopsy revealed a pleuritic abscess containing 700 or 800 gm. of pus, reaching from the middle of the sternum to the left axillary line and completely surrounding the anterior and left side of the pericardium, which was the seat of an intense inflammation.

Pel[10] gives an excellent report of a case:

Pel's Case.—A man of 32 had never been sick until he contracted left-sided pneumonia four weeks before admission to the hospital, Jan. 1, 1884. He complained of pains in the chest and dyspnea. Physical findings were: slight cyanosis, left side of chest bulging and its respiratory excursions diminished, apex-beat not perceivable, a flat tone anteriorly from the clavicle almost down to the costal margin, with absence of breath-sounds and of vocal fremitus; absolute cardiac dulness reaching 1 cm. beyond the right sternal line, heart-sounds distant, clear, and heard best at the right sternal line; posteriorly over almost the entire left side of the chest, flatness and absence of breath-sounds and of vocal fremitus. An incision was made between the eighth and ninth ribs in the left scapulary line and a large amount of pus escaped. The patient improved but slightly, the temperature remained high, he had a chill, the pulse was rapid, irregular, weak, fairly full. A week later, there was a distinct bulging of the precordial region, the apex-beat was not perceptible, the anterior area of flatness extended from the upper margin of the third left rib to 2 cm. beyond the right sternal line and 3 cm. beyond the left mammillary line. The outline of the flat area was triangular; no pericardial rub was heard; and heart-sounds were barely audible. A diagnosis of pericarditis exsudativa purulenta was made. After an incision had been made in the third interspace outside of the parasternal line, about one and a half or two liters of yellow pus came out in a stream which was synchronous with the heart-action. The introduced finger felt the heart beating. The patient improved immediately, but nevertheless, he died three days later of pyemia. The autopsy showed that there was no pericardial effusion, but there were two separate encysted empyemas, one posteriorly which had been opened at the first operation and was in process of healing, and the other on the inner side of the left lung; between the lung and the heart, surrounding the left heart and reaching from the second rib to the diaphragm.

Grancher's Case 1.[11]—An 11-year-old boy, when brought to the hospital, had the classical signs of a large effusion in the left pleura; posteriorly a flatness reaching to the spine of the scapula, with greatly diminished vocal fremitus and with very distant respiration below and bronchial respiration over the middle third of the left lung; anteriorly an area of tympanism below the left clavicle and, below this zone, a flatness which reached downward to the space of Traube, which was only slightly encroached on, and outward to the side of the chest, with diminished vocal fremitus and with bronchial respiration; the heart was displaced toward the right and the maximum of its pulsations was perceived at the right edge of the sternum. Although these symptoms would indicate a pleurisy with free fluid, Grancher made the diagnosis of left anterior mediastinal pleurisy for several reasons. There was no deformity of the thorax, *i. e.*, no enlargement of the left side of the chest, no dilatation of the left costal interspaces, no deviation of the lower end of the sternum toward the left. The maximum dulness was noticed, not behind, but in front and extended 1 cm. beyond the right sternal line, and even on the manubrium sterni the percussion-tone was flat. Furthermore, the displacement of the heart was very exaggerated; there was also a deep cyanosis of the lips and a marked collateral circulation on the chest. Nevertheless, the dyspnea was but slight. As it thus was evident that it was the anterior mediastinum that had yielded to the pressure of the fluid and not the thoracic wall, Grancher concluded that the fluid was not free but encapsulated between the mediastinum and the lung. A puncture was made (Grancher does not mention where it was done) and 850 gm. of serous fluid were withdrawn. The patient recovered.

Grancher's Case 2.[11]—This also concerned a child. The diagnosis of pericarditis with effusion had been made because of an enormous bulging of the precordial region with dulness extending from the sternum to the left side of the chest; the child was almost blue and was in imminent danger of syncope as soon as it was moved in the bed. Grancher considered the dulness too extensive for a pericarditis and found that the heart-sounds were not so obtuse and distant as is usual in pericarditis; they were heard quite well, but with their maximum intensity at the right edge of the sternum. Therefore, without asserting the integrity of the pericardium, Grancher concluded that probably mediastinal pleurisy was present. Puncture was made in the left axillary line and 950 gm. of serous fluid were withdrawn. The heart came back to its normal position, the dyspnea disappeared in a few hours, and the child recovered.

Thoinot and Griffon's Case.[13]—These authors have given an incomplete report of the case of a 45-year-old woman who was brought to the hospital on the fifth day of her disease, with the typical history of a pleuropneumonia of the left side. She suffered intensely from pain and dyspnea. Her countenance was pale and she was evidently deeply infected. There was distant bronchial respiration, Traube's space was sonorous, and the heart was hardly displaced. She died on the seventh day of her illness. At the autopsy a small collection of pus was found between the left lung and the anterior mediastinum; there were thick fibrinous membranes; the lower left lobe was consolidated. Pneumococci were found in the pus.

Dodd's Case.[15]—This was one of a 57-year-old man who about a month before had had pneumonia of the left lower lobe and thereafter had developed the usual symptoms of empyema. Percussion in the front gave dulness from the third left rib downward and from the edge of the sternum to the mammillary line, with absence of respiratory sounds; the apex-beat was closer to the sternum than normally; there was a place of tenderness as large as the end of a finger at the junction of the fifth rib and the sternum. Behind, there were dulness and absence of respiration-sounds from the seventh rib downward. Resection of the eighth rib was made in the midaxillary line and 250 c.c. of pus was evacuated. The patient improved only temporarily, the left lung gradually expanded, and vesicular breathing was heard to the base of the lung. But anteriorly, the only change to be found was that the apex-beat had returned to within half an inch of its normal position. He died twelve days after the operation from embolism in the left side of the brain. At the autopsy, an abscess with 300 c.c. of pus was found between the pericardium and the left lung and was in relation with the anterior wall of the chest only in the fourth intercostal space from the mammillary line for about 3 cm. toward the sternum. A needle in the fourth interspace, 1 cm. inside the mammillary line, would probably have found the abscess without entering the pericardium.

From the reports of these cases we find that the left anterior mediastinal pleurisy corresponds closely to ordinary exudative pleurisy in regard to etiology and pathology and to general symptoms, *i. e.*, those due to the infection. It is usually caused by the tubercle bacillus or the pneumococcus; the exudate is either serous or purulent, the latter being accompanied with formation of pseudomembranes. It is rare to find cases of left anterior mediastinal pleurisy without complications. Tuberculosis of other organs, a pericarditis, an empyema of another part of the left pleura, a pneumonia of the left lower lobe, an embolus of the brain are the complications which have been recorded in the reports of these cases.

The left anterior mediastinal pleurisy owes its distinctive features, of course, to the localization of the pathologic process. In some cases the entire height of the left anterior mediastinal pleura is affected; in other cases the pathologic changes are confined to the lower part of it. There is no case on record in which the inflammation has spread above or below the pulmonary peduncle to the posterior mediastinal pleura, but in some cases the anterior median parts of the left diaphragmatic and parietal pleuræ have also been involved. At times the larger part of the exudate is covered by the anterior edge of the left lung, leaving only a small part of it in relation to the thoracic wall, underneath and close to the sternum, but usually, if the effusion is somewhat large, and particularly in case of a serous exudate, the edge of the lung is displaced more or less outward, exposing a larger part of the exudate.

Of the subjective symptoms the pain is the most characteristic one, being localized behind the sternum or between the sternum and the left breast; it varies greatly in intensity and is not always present. The degree of dyspnea, of oppression, of anxiety, seems to be more proportionate to the severity of the pain than to the amount of exudate. Thoinot and Griffon's patient suffered intensely from pain and dyspnea, although the amount of pus was small, while in Grancher's first case the dyspnea was very moderate, although the effusion measured nearly 1,000 c.c

The objective phenomena vary, of course, according to the size of the effusion. A small effusion will cause an area of flatness extending only from the left sternal line to the left nipple-line, with diminished or absent vocal fremitus and respiration-sounds over the flat area, with only slight or no displacement of the heart, and with no cyanosis. If the effusion is large, it may cause a bulging of the precordial region and the flat area may reach from several centimeters beyond the right sternal line to the left axillary line and upward to the second rib, and we may find a flat percussion-tone even over the manubrium sterni. In these cases the anterior mediastinum is more or less displaced to the right; the apex-beat may be seen close to the sternum, but is usually not perceivable; in several cases the heart-beat has been noticed at the right sternal line. As a consequence of the displacement of the heart, more or less deep cyanosis may appear, but it seems to be of rare occurrence; only in one case was an engorgement of the thoracic veins noticed, the disturbance of the circulation being due probably to interference in the right auricle and the superior vena cava. To explain the cyanosis in cases of left-sided pleuritic effusion, as some authors do (Moxon[37]), as a result of pressure on the left auricle with subsequent stasis backward and dilatation of the right heart, seems scarcely to be accurate, as only the auricular appendage is covered by the left mediastinal pleura, and consequently liable to be exposed to pressure, while the rest of the left auricle is in relation to the organs contained in the posterior mediastinum. The respiration-sounds and vocal fremitus over the dull area are, as usually in pleurisy with effusion, diminished or absent. The heart-sounds are obtuse and distant and more clearly heard at right sternal line than to the left of the sternum.

The prognosis in left anterior mediastinal pleurisy is more serious than in pleurisy with free exudate because of the greater pressure to which the heart is exposed, and perhaps also because of greater danger of a complicating pericarditis or cerebral embolus.

In regard to the diagnosis of left anterior pleurisy, the main difficulty is to differentiate it from an exudative pericarditis, from a pleurisy with free exudate, and from an anterior suppurative mediastinitis.

The differential diagnosis between exudative pericarditis and left anterior mediastinal pleurisy is no doubt difficult. "Handelt es sich doch hier," as Pel says, "um die Unterscheidung einer Pericarditis suppurativa interna von einer Pericarditis suppurativa externa." We find in both a precordial dulness or even bulging, an apex-beat located inside the left border of the dull area, or entirely absent, distant heart-sounds; the triangular shape of the dull area usual in pericarditis has been observed also in a case of left anterior mediastinal pleurisy; cyanosis occurs in both; the character of the pulse is of no assistance in making a diagnosis. There is, however, one sign which if present is characteristic for left anterior mediastinal pleurisy, as Grancher has already pointed out, namely, that the heart-beat is perceived with its maximum intensity and the heart-sounds are heard most distinctly near the right sternal edge. It indicates that the heart has been pushed toward the right by a pleuritic effusion and not removed from the proximity of the anterior chest wall by the interposition of a pericarditic exudate. Other signs may be of help for the diagnosis. A well-marked border-line between the flat area and the resonant area over the left lung speaks in favor of a pericarditis. The presence of Skoda's sign below the left clavicle, or of signs of congestion or of inflammation of the left lower lobe, or of signs of another encysted pleuritic effusion speak in favor of a mediastinal pleurisy.

Left anterior mediastinal pleurisy might be mistaken for a pleurisy with free exudate under two conditions. One of them is that, in addition to the left anterior mediastinal pleurisy, another encysted gathering of fluid exists in the lower posterior part of the left pleura; a puncture will then be made posteriorly and the fluid withdrawn, but the symptoms from the anterior part of the chest will remain unchanged and a correct diagnosis will be possible. The other condition is that, in a case of left anterior mediastinal pleurisy, the left lower lobe is congested and surrounded by a thin layer of fluid, as occurred in one of Grancher's cases; a correct diagnosis was here made, when by careful observation, admirable for its accuracy, it was demonstrated that it was the mediastinum and not the thoracic wall that had yielded to pressure from the fluid.

The differentiation of left anterior mediastinal pleurisy from anterior suppurative mediastinitis (Hare,[30] Christian[38]) also offers some difficulties, at least under certain conditions. When a mediastinitis is due to a trauma or to a sternal osteomyelitis or to a mediastinal lymphadenitis, the diagnosis might be quite clear; but, when, as occurs in rare cases, it is caused, through extension of the inflammatory process, by a pulmonary affection or by a pleurisy or a pericarditis, it seems hardly possible to arrive at a definite diagnosis.

A skiagram might be of service for diagnosing this kind of cases, but no mention is made of its use in any of the reports which have been published hitherto.

PLEURITIS MEDIASTINALIS ANTERIOR DEXTRA

While no reports of right anterior mediastinal pleurisy could be found in the literature, two cases of this kind have come under my notice.

Case 1 (personal).—Adolph N., a tuberculous subject, aged 37, on June 12, 1906, suddenly became very sick, had a severe chill and a very acute pain which he located in the right side of the chest, especially between the sternum and the right nipple, and which made it extremely difficult for him to breathe. He was admitted to the Augustana Hospital June 18, 1906. Temperature 102, pulse 86 and respiration 24. His lips were dark blue; both head, neck, thorax and upper extremities were deeply cyanotic, and the veins in these regions were engorged. Amphoric breathing and large crackling râles were heard below the right clavicle. The percussion-tone was dull over the lower anterior part of the right lung, with distant breath-sounds of vesicular character and only faintly perceptible vocal fremitus. Over the posterior part of the right lung, there was normal resonance and vesicular breathing. A dulness over the corpus sterni I ascribed to a dilatation of the right heart. Over the lower anterior and lateral part of the left lung, there were signs of a small effusion, probably remaining from an attack of pleurisy he had had a year previously. The apex-beat could not be located.

During the following three weeks, I tried in vain to determine the locality of the effusion, of the presence of which I had no doubt. I made numerous punctures over the lower anterior part of the right lung, all with negative results. A consulting physician was called, but could find no evidence of a gathering of fluid. In the meantime the patient suffered agonies, was deeply cyanotic, was practically gasping for breath both night and day, had an extremely severe pain in his chest, which made frequent hypodermic injections of morphin necessary. He could not eat on account of the dyspnea. The temperature usually remained at about 98 or 99, but occasionally rose to 101 F.; the pulse was not very rapid, varying between 73 and 100 a minute; the respiration varied between 16 and 28 a minute.

Finally on July 13, finding a very narrow margin of flatness and total absence of breath-sounds and vibrations along the right edge of the sternum, I introduced the exploratory needle in the fourth right interspace about 1 cm. from the sternum and aspirated a syringeful of serous fluid. Dr. A. J. Ochsner was asked to operate, partly because I did not like to introduce a large aspirating needle where I had made the exploratory puncture, on account of the proximity of the heart, and partly because I considered a continuous drainage necessary to relieve the condition permanently. The operation was performed the same day. After the sternal end of the fifth rib had been resected and the pleura had been incised, the lower anterior corner of the lung was seen in the wound and was seemingly normal. A finger was introduced around the anterior edge of the lung and as soon as it was pushed down between the lung and the mediastinum, there was a gush of serous fluid, the amount of which was estimated at about 500 c.c.

After the operation the cyanosis rapidly disappeared and the dyspnea was greatly relieved. Unfortunately, however, the patient was so exhausted that he failed to pick up and died July 20, 1906, a week after the operation. Autopsy was not permitted.

Case 2 (personal).—George G., aged 30, a laborer, was admitted to the Augustana Hospital March 18, 1908. He had been well up to March 15, when he suddenly became sick. On admission he complained of a moderate pain in the right side of the chest, coughed, but expectorated only some frothy mucus; at no time did he raise any typically pneumonic sputum. He had to sit up in bed to get air, and evidently suffered greatly from dyspnea. Temperature 103.3, pulse 156 and respiration 48. His lips were dark blue; both head, neck and upper extremities were deeply cyanotic, and the veins in the cyanosed parts were engorged. The apex-beat was seen two finger's breadth outside the left nipple-line; a dulness over the corpus sterni I ascribed to a dilated right heart; the heart-tones were clear. The left lung was normal except that the respiration-sounds were increased. Over the entire front part of the right lung there was marked dulness, increasing downward, and also over the lower half posteriorly; the upper posterior half was resonant. The vocal fremitus was increased over the upper part anteriorly, slightly diminished below. Bronchial breathing was heard over the entire front part of the right lung, close to the ear over the upper part, and more distant over the lower.

On March 19 venesection on right arm was made, as it was thought possible that the cyanosis was due to dilatation and insufficiency of the right heart. A quantity of dark blood (300 c.c.) was removed; no improvement. March 20 an exploratory puncture was made in the fifth interspace, just outside the right mammillary line, also with negative result. The next day I made a second puncture in the same interspace, but inside the mammillary line, also with negative result.

March 23, his condition was practically unchanged, the dyspnea was very severe, the cyanosis deep and the pulse was at times irregular. On examination I found a small area close to the right sternal edge where the dulness was particularly marked, the breath-sounds were barely audible, and the vocal fremitus was totally absent. I had observed the same phenomena on the day of his admission, but explained it as being due to a dilatation of the right heart. As, however, no other signs of such a dilatation were observed, I became convinced that an effusion between the right lung and the mediastinum was causing both the displacement of the apex-beat and the cyanosis as well as flatness and absence of both fremitus and breath-sounds. The exploratory needle was therefore introduced for the third time, but now in the fourth interspace, between the parasternal line and the sternal edge. A turbid, yellowish fluid was obtained. The same day the patient was operated on by Dr. E. H. Ochsner. The sternal end of the fifth rib was resected and about 500 c.c. of fluid removed. The cyanosis soon disappeared after the operation and the dyspnea was gradually relieved. The draining fluid gradually turned into thick yellow pus, the wound granulated and healed, and on June 8, 1908, the patient was discharged after having made an uninterrupted recovery. I regret to say that no effort was made to ascertain what micro-organism was the cause of the pleurisy. I believe, however, that I am justified in saying that it probably was a case of primary pneumococcus-infection of the pleura with secondary or simultaneous congestion of the lung.

From the reports of these two cases of right anterior mediastinal pleurisy, it will be seen that they, in many respects, showed a similarity with cases of left anterior mediastinal pleurisy. They were caused, one by tuberculosis, one by pneumococcus infection. In one of them the exudate was serous, in the other purulent. Most of the symptoms were like those caused by left-sided pleurisy: pain, most severe between sternum and right breast, dyspnea and oppression in proportion to the pain, a flatness along the right sternal edge and over the corpus sterni, a dulness over a smaller or larger part of the right lung, due to simultaneous congestion, absence of breath-sounds and vocal fremitus over a narrow flat area close to the sternum, and displacement of the heart.

In but one respect, I believe, the two cases of right anterior mediastinal pleurisy differed materially from those on the left side, namely, in regard to cyanosis, and this difference is sufficiently great, in my opinion, to form one of the reasons why the right and the left anterior mediastinal pleurisy should be distinguished as two different forms. In the two cases observed by me, the most striking feature was the cyanosis, which was extremely deep. Furthermore, the cyanosis was limited to head, neck, thorax and upper extremities and the veins in these regions were engorged. In Andral's and Thoinot's cases of left anterior mediastinal pleurisy, the countenance was pale; in Pel's case there was slight cyanosis; in Richardière's and in Dodd's cases no mention was made of the complexion and consequently one is justified in assuming that, if cyanosis was present, it was not marked. Only in Grancher's two cases was the cyanosis deep, and only in one of these were the thoracic veins dilated. Both patients were children with very large effusions.

It is only natural that cyanosis should be an early symptom in right anterior mediastinal pleurisy, when one considers that it is the right auricle and particularly its upper extension, the superior vena cava with its easily depressible walls, that are directly covered by the right mediastinal pleura, and are the very first organs that will be exposed to pressure from an effusion gathering between the right lung and the anterior mediastinum. The intrathoracic part of the inferior vena cava seems to be too short and located too far backward to suffer from pressure from the exudate; at least in my two cases there were no signs of passive congestion below the thorax. On the left side conditions are somewhat different. An effusion gathering between the left lung and the anterior mediastinum will cause pressure on the right and left ventricles; but as their walls are rigid, no disturbance of the circulation will arise until the effusion becomes large enough to displace the heart considerably toward the right and thus cause, secondarily as it were, a pressure on the right auricle and the superior vena cava.

Another reason, however, for differentiating the right and the left anterior mediastinal pleurisy as two distinct forms, is the difference in their differential diagnosis. While either of them could be mistaken for a pleurisy with free exudate or a suppurative anterior mediastinitis, it is only a left anterior mediastinal pleurisy that could be confounded with pericarditis and only a right anterior mediastinal pleurisy that could be confounded with a dilated right heart and with any disease causing a direct pressure on the commencement of the superior vena cava.

Right anterior mediastinal pleurisy and dilatation of the right heart both produce dulness over the sternum extending beyond the right sternal edge, displacement of the apex-beat toward the left, and cyanosis. It should not, however, be difficult to differentiate these two conditions because, when these three symptoms, dulness, displacement of apex-beat, and cyanosis are as pronounced as they were in the two reported cases and if they are due to dilatation of the right heart, other symptoms of dilatation must necessarily also be present, namely, epigastric pulsations, tricuspid murmur, and venous pulse, symptoms which are not found in right anterior mediastinal pleurisy.

Any pathologic formation causing pressure on the superior vena cava may give symptoms similar to those of the right anterior mediastinal pleurisy; but particularly mediastinal sarcoma and carcinoma, aneurism of the aorta, and anterior suppurative mediastinitis should be differentiated from this form of pleurisy. The history of the disease, its mode of onset, as well as its course, the presence or absence of signs of infection, among which a high leukocytosis is of special importance, the presence of coordinate symptoms, are factors which, when carefully considered, should be sufficient to insure a correct diagnosis. The possibility of other mediastinal tumors or inflammatory products being present (Hare[30]) should be kept in mind, as a lymphadenitis, a mediastinal dermoid cyst, a syphilitic mediastinal gumma (Buttino[40]), a lipoma, a metastatic cancer, an endothelioma, a branchioma (Duret[41]), a chrondroma, a fibroma, hematoma, a fibrous infiltration, enlargement of mediastinal glands or of thymus, etc.

PLEURITIS MEDIASTINALIS POSTERIOR

Eleven cases of posterior mediastinal pleurisy have been previously reported.

Andral's Case 2 (Cited from Dieulafoy[16]).—A 37-year-old man entered the hospital June 14, 1822, showing signs of pulmonary phthisis in the last stage. June 17 he had a vomica, expectorating a large amount of pus. He died July 8, 1822. At the autopsy, numerous tuberculous cavities were found in both lungs. There was a perforation the size of a pea of the posterior part of the right main bronchus, leading into a cavity which was large enough to admit an orange. This cavity was bounded exteriorly by the right lung, posteriorly by the ribs, interiorly by the spinal column and the posterior mediastinum, anteriorly by the right pulmonary vessels.

Dieulafoy's Case 1.[17]—A 44-year-old woman caught a cold and had chills; next day she began to have a cough, which soon became paroxysmal and she was considered to have whooping-cough. After two months she became hoarse, a few days later stridor appeared, and she had violent attacks of suffocative cough, which was accompanied, if coming on shortly after a meal, by vomiting, and followed by the expectoration of a whitish, frothy suptum. Finally it became difficult for her to swallow. She entered the hospital three months after the beginning of her illness. On examination, no abnormal signs from the chest were found, the temperature was normal, but the larynx and the trachea deviated toward the right, the false vocal cords were edematous, there was *no* paralysis of the recurrent nerve. She gradually grew worse, the stridor became still more pronounced, the dyspnea was continuous. A week after her admission, she had a chill, followed by fever, and a few days later she had a vomica and expelled, during twelve hours, 200 gm. of yellow pus, which contained pneumococci. The diagnosis of posterior left mediastinal pleurisy was made. The symptoms gradually disappeared and the patient recovered.

Dieulafoy's Case 2.[17]—A young, healthy man suddenly became sick with chills, oppression and dyspnea, which at first came on only on exertion, but soon became permanent and was aggravated by the slightest effort. A few days later he began to have fits of paroxysmal, dry cough, resembling whooping-cough, and at the same time his voice became husky. Four weeks later, deglutition became difficult and only liquids could be swallowed. Five weeks after the beginning of his illness, he was admitted to the hospital. A loud *inspiratory stridor* was heard, there was depression of jugulum and epigastrium at each inspiration, the veins of the upper part of the chest were dilated. At the level of the third and fourth vertebræ a small area of dulness was found between the scapula and the spine on the left side, over which area bronchial respiration and a few râles were heard. On the day after his admission he had a vomica and expectorated about 80 gm. of thick greenish pus. No bacteria were found, but the patient's blood-serum agglutinated pneumococci. He gradually recovered completely.

Breton's Case.[19]—A 47-year-old laborer, an alcoholic, in May, 1904, began to complain of palpitations and dyspnea on exertion, and shortly afterward of severe retrosternal pains and precordial angina with sensation of faintness and with vertigo. On his admission to the hospital in June, 1904, he was intensely anemic, had no fever, remained in dorsal position, in which his respiration was free, while any other position caused oppression and dyspnea. Physical examination of the lungs revealed only a slight dulness close to the spine on the left side. The apex-beat was seen 1.5 cm. outside the nipple line, palpation gave the impression of violent cardiac contractions. The closure of the aortic valves was accentuated and was heard also to the right of the spinal column; the pulsations in the crural arteries were asynchronous. Gradually a dulness in the aortic region appeared, slowly increasing and spreading along the right sternal edge, and, at about the same time, a murmur could be heard in the third right interspace which at first was single, systolic, soft, and afterward became double. Radioscopy showed a dark zone close to the left lateral aspect of the spinal column at the level of the mediastinum. The patient began to have a slight cough, but still no fever. The diagnosis of aneurism of the thoracic aorta was made. The patient gradually grew worse and in July, 1904, new symptoms appeared: cachectic discoloration of the skin, dilatation of the thoracic veins, hoarseness and dysphagia. The diagnosis of aneurism was abandoned for one of neoplasm of the posterior mediastinum. The patient died August 1, 1904, in extreme dyspnea. Three days previous to death the temperature was febrile.

At the autopsy a pleural abscess containing 300 or 400 gm. of yellow pus was found between the posterior mediastinum and the left lung, closely adherent to the descending aorta. The adjacent pulmonary parenchyma showed traces of subacute inflammation. The pericardium contained 200 gm. of serous fluid, the myocardium was hypertrophic, no valvular lesions were found and the aorta was normal, excepting a thickening of its membranes where it adhered to the abscess. Amyloid degeneration was found in the liver and kidneys.

AUTHOR'S CASE.—One case of posterior mediastinal pleurisy has come under my personal observation. Nils L., aged 35, a teamster, contracted pneumonia in April, 1897. After five days he began to improve, but after another week or two he gradually became worse again, had severe chills at irregular intervals, expectorated yellow pus, usually only small amounts, but a few times by the mouthful, in fact, so much that it came out both by nose and by mouth; he was losing in weight and the feet began to swell. When this condition had lasted about two months, I was called to see him. He was then emaciated, temperature 102, pulse 92, respiration 22 to the minute; he complained of slight dyspnea, but could breathe comfortably when in bed. There was dulness over the entire left lower lobe posteriorly, bronchial respiration was heard over the lower part of the scapula and the breath sounds were faint and distant over the inner and lower parts of the left lung posteriorly. The urine contained a small amount of albumin and there was a considerable swelling of the feet (beginning amyloid degeneration of the kidneys). A few days later, on closer examination, I found a narrow vertical zone parallel with and close to the spine, where the percussion tone was flat and where breath sounds and vocal fremitus were absent. An exploratory puncture was made in the seventh costal interspace, fairly close to the spinal column; yellow pus was obtained, which contained numerous pneumococci. The next day, after the patient had been anesthetized, two more exploratory punctures were made, more laterally and lower down than the first one, as it was thought advantageous, in order to insure free drainage, to have the opening laid as low as possible, but when the result was negative in both instances, a resection of the eighth rib was made, close to the spine and about 250 c.c. of pus emptied out of the encapsuled cavity. The wound gradually closed, the patient recovered and gained 50 pounds in weight in less than half a year. No symptoms of pressure on the mediastinum and its organs were present in this case.

OTHER CASES.—Chauffard[18] reported four cases of posterior mediastinal pleurisy with serous effusion. In none of them were there any pressure symptoms. The diagnosis was based on the presence of a narrow, vertical dulness along the spine, with the usual symptoms of effusion. Exploratory puncture was made in three of them with positive results. All of the patients recovered spontaneously.

Fernet[20] reported two cases of posterior mediastinal pleurisy, both on the left side, one following after pneumonia and one after lung gangrene. Both cases showed the general symptoms indicating the presence of a collection of pus, and this was located when an area of flat percussion tone and absence of vocal fremitus was found between the inner edge of the scapula and the spine. In both cases the third and fourth ribs were resected close to the spinal column and a large amount of pus removed. In one of the cases the patient had a vomica of about 50 gm. of pus a few days after the operation. No symptoms of pressure on the posterior mediastinum were present in either of these two cases and it seems that although it was chiefly the mediastinal pleura that was affected, the inflammation also involved the pleural covering of the interlobar fissure and of the diaphragm.

Laffoigue's case,[21] of which only an incomplete report is given, concerned a 22 year old man who, when admitted, had high fever, did not cough and had no dyspnea. A week later the apex beat was found two fingers' breadths outside the mammillary line, and another week later, signs of effusion (dulness, egophony, bronchial expiration) were noticed over a longitudinal area to the right of the spinal column. A skiagram confirmed the diagnosis, but exploratory puncture gave a negative result. The patient gradually recovered, the dulness, etc., disappeared spontaneously and the apex beat receded to its normal position. The author considered that both the anterior and posterior mediastinal pleura were affected in this case. In view of the fact, however, that exploratory puncture between the spine and the scapula was negative, one may be justified in doubting the correctness of the diagnosis.

Out of these twelve cases nine are of only moderate interest, as they give no symptoms of pressure on the posterior mediastinum. They were ordinary cases of partial, encysted pleurisy with a somewhat unusual localization between the lung and the posterior mediastinum. In their symptomatology and diagnosis they differed in no respect from an ordinary encysted pleurisy and their distinction as a special form would hardly be warranted if an encysted pleuritic exudate of the same localization were not liable, under other circumstances, by pressure on the posterior mediastinum and its organs, to produce symptoms which are radically different from the usual ones of pleurisy as exemplified by Breton's one and Dieulafoy's two cases. The reason why an encysted exudate between the lung and the posterior mediastinum does not, in all cases, produce pressure-symptoms is not quite clear. The amount of the exudate is evidently of only partial importance, as in one of Fernet's cases two liters of pus gave no pressure-symptoms, while in Breton's case only three or four hundred grams of pus produced very serious ones. Probably the occurrence of pressure-symptoms is dependent on how early the adhesions are formed and how deeply the exudate is situated. In both Dieulafoy's and Breton's cases the abscess was evidently remote from the surface, as the only superficial finding was a slight dulness between the scapula and the spine.

The posterior mediastinal pleurisy corresponds, just as does the anterior mediastinal form, to ordinary exudative pleurisy in regard to etiology, pathology, and general symptoms and gives a distinctive clinical picture only when it produces pressure-symptoms on the organs contained in the posterior mediastinum.

In Dieulafoy's Case 1 the exudate caused paroxysmal cough by pressure on the left pneumogastric nerve, stridulous inspiratory dyspnea, edema of larynx and hoarseness by pressure on the trachea, which deviated toward the right, and, perhaps on the recurrent laryngeal nerve, and, finally, dysphagia by pressure on the esophagus.

In Dieulafoy's Case 2 the exudate caused paroxysmal cough by pressure on the left pneumogastric nerve, stridulous inspiratory dyspnea with depression of jugulum and epigastrium by pressure on the trachea, dysphagia by pressure on the esophagus, and engorgement of the thoracic veins by pressure on the left azygos veins.

In Breton's case the exudate seems to have exerted pressure almost exclusively on the thoracic aorta, resulting in retrosternal pain and precordial angina, palpitations, dyspnea on exertion, accentuated closure of the aortic valves, and hypertrophy of the left ventricle with the apex-beat displaced toward the left.

Posterior mediastinal pleurisy is always unilateral. In six of the twelve reported cases, the left posterior mediastinal pleura was affected, and in five of these the exudate was purulent, in one putrid; the right posterior mediastinal pleura was affected in six cases, and in all of these cases but one was the exudate serous.

The prognosis of posterior mediastinal pleurisy seems to be very much less serious than of the anterior, as, out of the twelve cases, only two ended fatally. In this connection it may be worthy of note that, out of the seven cases with purulent or putrid exudate, vomica occurred in not less than five, and that in two of these five cases thoracotomy was not found necessary, as the abscess gradually emptied itself completely through the air passages.

The diagnosis of posterior mediastinal pleurisy, in cases in which no symptoms of pressure on the posterior mediastinum are present, is based on the same principles as the one of any encysted pleuritic effusion. When symptoms of pressure arise, a differential diagnosis must be made between posterior mediastinal pleurisy and any disease which is liable to produce pressure.

I shall confine myself to the enumeration of such diseases: (1) abscess of the posterior mediastinum, whether due to trauma, foreign body, suppuration of glands, perforation of esophagus or trachea, or to an inflammation spreading from an adjacent organ as, a retropharyngeal abscess, a pulmonary abscess, a suppurative pericarditis, a vertebral osteitis, or to metastasis; furthermore, (2) hypertrophic glands, (3) aneurism, (4) gumma, (5) *neoplasm.*

In case stridor is present, a differentiation should be made, as Dieulafoy points out, from any tracheal lesion, whether intrinsic or extrinsic, which is liable to produce stridulous dyspnea, as intratracheal gumma, polyp, stenosis, pressure from cervical glands or from struma.

TREATMENT

The treatment of mediastinal pleurisy, whether anterior or posterior, differs in no way from the usual one of any encysted pleurisy except that the indication for surgical interference comes earlier than in any other form. In order to be able to make a thoracocentesis or a thoracotomy at the proper moment, we should not hesitate to make not only one, but if necessary, several exploratory punctures to locate the exudate. No rule can be given as to where to introduce the exploratory needle. By minute physical examination we should try to determine where the maximum flatness is located, where the vocal fremitus is least perceptible, where the breath-sounds are most distant, where egophony is most pronounced, and introduce the needle in the outer edge of the area thus determined.

CONCLUSIONS

1. The clinical manifestations of mediastinal exudative pleurisy differ according to the part of the mediastinal pleura involved, and consequently according to the part of the mediastinum exposed to pressure.

2. For this reason three different forms of mediastinal pleurisy are to be distinguished: (1) pleuritis mediastinalis anterior sinistra, (2) pleuritis mediastinalis anterior dextra, (3) pleuritis mediastinalis posterior.

3. This distinction is justified, not merely from an anatomic point of view, but because it corresponds closely to clinical facts. Pleuritis mediastinalis anterior sinistra resembles very much exudative pericarditis. The most striking symptom of a pleuritis mediastinalis anterior dextra is a very deep cyanosis of head, neck, thorax and upper extremities. A posterior mediastinal pleurisy will, provided the exudate is deeply situated and is sufficiently large, cause inspiratory stridor and sometimes a deviation of the trachea by pressure on the trachea, dysphagia by pressure on the esophagus, engorgement of the intercostal veins by pressure on the azygos veins, and paroxysmal cough by pressure on the pneumograstic nerve.

1311 La Salle Avenue.

ABSTRACT OF DISCUSSION

Dr. DeLancey Rochester, Buffalo, N. Y.: Although I have nothing to offer in the way of cases to report in support of Dr. Frick's position, I do not believe that such additions to the literature should go without some discussion. We owe him a great deal for his careful analysis of his cases and for the careful examination and the knowledge displayed in making the diagnosis and his confirmation of it by exploration and, whenever possible, by autopsy. The literature on this subject will be greatly added to; we shall all be required to look more carefully into these cases hereafter. When there is cyanosis and difficult breathing, cases that have heretofore been looked on as cardiac, can now be proved to be mediastinal pleurisy, a condition which can be relieved by operative procedures.

Dr. Frank Smithies, Ann Arbor, Mich.: Were any photographic findings registered in these cases?

Dr. Anders Frick, Chicago: No photographs were taken of the anterior mediastinal pleurisies. In a few cases of left posterior mediastinal pleurisy, however, skiagraphs were taken and they indicated a shadow or dark zone to the left of the posterior mediastinum. In these cases, also, there was dulness between the spine and the left scapula.

TRAUMATIC RUPTURE OF THE FIXED PORTION OF THE MALE URETHRA *

OTTO C. GAUB, M.D.
Surgeon, Allegheny General Hospital, St. Joseph's Hospital and Dispensary
PITTSBURG

Traumatic rupture of the fixed portion of the male urethra is a most serious injury, both in its immediate aspect and remote consequences: immediately serious, because of leakage of urine following the several classical paths of extravasation, with subsequent decomposition, or on account of complicating lesions of osseous or soft tissues; remotely so, owing to formation of traumatic stricture, with its attendant urinary stagnation and infection of the entire urinary tract.

The force causing a rupture of the urethra acts in one of two ways—in a direct manner, the patient falling astride an object, or indirectly, the pelvic bones being crushed together, the force usually acting in the coronal plane of the body.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

Produced in a direct manner, the urethral tear may be in a part anterior, within, or posterior to the layers of the triangular ligament, usually without complicating factors. Indirectly produced by crushing force, the tear in the urethra is often associated with an injury to the pelvic bones or soft tissues; these latter may be so disjointed or broken, the pelvic fascia so lacerated and torn from its attachments as to allow the bladder and prostate gland to hang loosely in the pelvis. The tear of the puboprostatic ligaments opens a communication between the space of Retzius and the perineum.

A tear of the membranous urethra, accompanied by laceration of one or both layers of the triangular fascial septum, or a transverse rupture of the urethra at the apex of the prostate gland, are the types of injury found as a result of force acting in an indirect manner.

The signs of a ruptured urethra are patent in the great majority of cases. With a history of an injury as described, coupled with a varying amount of free blood issuing from the urethra, inability to pass urine (when the urethra is completely torn) or difficulty experienced in voiding a small quantity of urine, always preceded by pure blood from the canal (when the tear in the urethra is partial) are extremely suggestive. Attempts made to pass a catheter are futile and usually serve to increase the bleeding.

Depending on the part of the fixed urethra injured, local inspection reveals a fulness and perhaps discoloration of the upper part of the perineum, noticeable at the perineoscrotal junction when the bulbous part of the tube is injured; or the swelling may be confined to the middle of the perineum or about the anal region when the tear is located between the layers of the triangular ligament or posterior to them. The tumefaction is caused by an effusion of blood perhaps mixed with urine. If, for any reason, the lesion is not immediately repaired, infection occurs extending along paths previously mentioned—underneath Colles' fascia through the abdominoscrotal passageway to the anterior and lateral abdominal walls following injury to the bulbous urethra; confined, at first, between the layers of the triangular ligament, subsequently ulcerating either through the anterior leaflet, gaining access to the space bounded by Colles' fascia, or through the posterior leaflet, invading the cellular tissue about the rectum.

The lesion is an anatomic one and requires an anatomic operation for its repair. It is a self-evident proposition that a procedure which restores the parts as nearly as possible to normal, brought about with a minimum of injury to surrounding structures, carrying with it a minimum mortality and shorter period of disability, both immediate and remote, is the procedure of choice. These factors are conserved by performing a circular urethrorrhaphy through a perineal opening, which incision gives access to all parts of the fixed portion of the male urethra.

The operation is greatly facilitated by placing the patient in the exaggerated dorsal position. For this purpose, the old Clover's crutch is used, supplemented by a sand-bag placed under the sacrum, which flexes the pelvis on the vertebral column so as to bring the perineum in the horizontal plane. This position renders the structures taut and makes possible an anatomic dissection. The object of this dissection resolves itself into an effort to find the proximal end of the torn urethra, the distal end being readily located by means of a sound introduced through the external meatus.

When the tear is situated anterior to the superficial triangular ligament, the proximal end of the urethra may be found through the original tear in the accelerator urinæ muscle; or this structure may be split along its median raphe, affording further working room and the end readily found.

When the tear is located at the apex of the prostate gland, the incision through the skin of the perineum may at once open an area filled with clotted blood, or it may be necessary to cut the central tendon of the perineum to reach the site of injury.

It is in those patients suffering from a rupture at the bulbomembranous juncture or situated in the membranous urethra, between the layers of the triangular ligament, that the procedure of retrograde urethral catheterization becomes necessary, rather than a suprapubic cystotomy as an aid in finding the proximal end of the torn urethra. The anatomic landmark sought is the apex of the prostate gland. The technic is similar to that carried out by Young in the performance of perineal prostatectomy, but without a guide. This step is not difficult of accomplishment, by reason of the excellent position of the patient. The urethra, immediately in front of the apex of the prostate, is opened by a linear incision, through which a small sound or guide is introduced from behind forward, facilitating the discovery of the proximal torn end of the urethra.

With both the distal and proximal ends of the ruptured urethra secured, the exaggerated dorsal position of the patient is modified, relaxing the perineal structures, thus aiding the suturing of the anterior wall of the torn canal; then the introduction of a rubber catheter from the external meatus to the bladder, completion of the circular urethrorrhaphy and closing the linear incision in the urethra at the apex of the prostate.

If the general condition of the patient does not warrant the completion of the technic of suturing the ends of the torn canal the catheter will act as a splint favoring the reparative process.

It is observed that following a rupture of any part of the fixed urethra, complicated or not by injury to surrounding structures, a catheter introduced into the bladder through the proximal torn end will evacuate a large quantity of clear urine. This retention is probably due to interference with the nerve-supply of the internal vesical sphincter, increasing its tonicity, a fact of importance, in that primary shock may be combated without the fear of continuous leakage of urine demanding immediate drainage of the bladder.

Perhaps the vulnerating force may be of sufficient degree so to distort and dislocate the perineal structures as to make it impossible to discover the proximal end of the torn urethra. In this case the only resource is to open the bladder suprapubically and carry out a retrograde catheterization. The condition of the patient may contraindicate a complete operation as a primary procedure. This matter of time, type and choice must be determined by the individual operator.

The force necessary to produce an injury of so grave a nature as rupture of the urethra undoubtedly devitalizes tissues, predisposing to infection. This imminent danger may be anticipated by appropriate drainage. If the character of the injury is such as will lead to infection underneath Colles' fascia, a rubber tissue drain of this space emerging through the perineal incision is indicated, or a through-and-through perforated tubular drain from the perineal incision, following the abdominoscrotal passageway on one or both sides, making its exit at the pubes, may prevent a serious and annoying infection.

The wound in the perineum associated with an uncomplicated rupture of the urethra at the apex of the prostate will be cared for with a rubber tissue drain from the site of the rupture to the perineal surface.

When the ligamentous attachments of the prostate are torn, affording a communication between the prevesical space and the perineum, a perforated rubber tube, introduced through a small incision in the median line immediately above the symphysis pubis, passing to one or the other side of the prostate and emerging from the perineal incision, will prove a wise precaution.

REPORT OF CASES

The following cases typify the subject-matter:

CASE 1.—*Patient.*—(Admission 40,078).—J. L. M., electrician, aged 30, was admitted to the Allegheny General Hospital, Aug. 2, 1909. The patient was on a ladder removing electric lamps, when it slipped and he fell astride an iron pipe.

Examination.—This showed on the inner aspect of right thigh a bruise, and also a slight bruise on right side of scrotum. In the median line of the perineum a small tumefaction was observed. The patient suffered very little pain. Blood escaped from the external meatus. Attempts at urination were unsuccessful, producing great distress and increasing, apparently, the swelling in the perineum and area about the anal region. The bladder on palpation was found moderately distended. Attempts at catheterization were unsuccessful.

Operation.—The patient was placed in the exaggerated dorsal position, a sound was introduced and felt at a point posterior to the base of the triangular ligament, a median incision was made from the perineoscrotal junction to within half an inch of the anal fold, the area was opened containing clotted blood, mixed with urine. The entire prostate gland presenting a minute portion of urethra at its apex, was found hanging loosely in the injured area. The structures about the gland were torn and lacerated, allowing the examining finger to be readily inserted into the space of Retzius and palpated through the anterior abdominal wall, immediately above the symphysis pubis. Suture of the anterior wall of the urethra with interrupted catgut sutures, the introduction of a catheter into the bladder and also through the anterior portion of the urethra, evacuation of clear urine, completion of circular urethrorrhaphy, the introduction of a perforated rubber drainage tube through a small median incision immediately above pubes and brought out through the perineal wound, along left side of gland, with closure of skin wound completed the operation.

Convalescence was uninterrupted and the patient was discharged Aug. 21, 1909, nineteen days after the operation. Occasionally there was a slight discharge of urine through the perineal opening which ceased entirely within the next ten days.

CASE 2.—*Patient.*—(Admission 41,820).—C. B., laborer, aged 30, was admitted to the Allegheny General Hospital Jan. 1, 1910. The patient was walking in the street when he stepped on the edge of the cover of a man hole, which turned on end, the patient falling astride it. He was helped home, suffering severe pain in the perineal region and bleeding from the meatus. He went to bed, but was unable to sleep. Next morning he had several chills and suffered severe pain in lower abdomen. A physician was sent for who found the bladder distended to within one inch of the umbilicus. An attempt to catheterize the patient was unsuccessful and bleeding from the canal commenced. The patient was sent to the hospital.

Examination.—Distended bladder was present on inspection and palpation, the area over the bulbous urethra was swollen and discolored; there was bleeding from the external meatus. Temperature was 100.4, pulse 118.

Operation.—The patient was placed in the exaggerated dorsal position and a median incision over the bulbous urethra made. Clotted blood was found underneath Colles' fascia. There was laceration of the fibers of the accelerator urinæ muscle. A sound introduced through the external meatus demonstrated the distal torn end of the urethral canal, but was unable to find the proximal end of the torn tube. The incision was carried back to within one-half inch of anal folds. Blunt dissection was made of the area on either side of the central tendon of the perineum, which structure was cut. Further dissection disclosed the apex of the prostate gland. The urethral canal was opened at the apex of the gland, being careful to grasp the mucous membrane on either side of incision. The introduction of a small sound made it possible to find the proximal torn end of the urethra, which had been severed at the bulbomembranous junction. Introduction of the catheter into the bladder evacuated a large quantity of clear urine. Suture of the anterior wall of the urethral canal, the introduction of a catheter from the external meatus to the bladder, completion of circular urethrorrhaphy, closing of the linear urethrotomy wound, the insertion of a rubber tissue drain from site of tear to perineal surface and closure of the skin incision were the further steps in the operation.

Subsequently it was necessary to pass a drainage tube through the abdominoscrotal passageway on both sides, owing to infection. On this account convalescence was protracted. The catheter was removed on the fifth day. Leakage of urine through perineal wound persisted for four weeks. The patient was discharged from the hospital March 12, 1910. Examination was made June 4, 1910, with the introduction of a 27 French sound without difficulty, revealing a slight roughening at site of tear. The urine was negative.

CASE 3.—*Patient.*—(Admission 41,992).—T. S. S., bridge inspector, aged 53, was admitted to the hospital Jan. 14, 1910. The patient was at work on a bridge when he fell astride a log. He rested about one-half hour, then he resumed work, continuing until time to quit about an hour later. He paid no attention to his hurt. While on the train bearing him to his home he coughed several times and felt as if something gave way at the site of injury. After a short time he noticed that his clothing was blood-stained and on examination found that he had bled freely from the external meatus. On his arrival home Dr. Ray (Glenshaw) who was called to see him, attempted to pass a catheter but did not succeed, after which the patient was sent to the hospital.

Examination.—Patient walked into the hospital about nine hours after the injury. The bladder was found distended, and the external meatus closed by clotted blood, the perineum, scrotum, penis, pubic area and flanks were greatly discolored, almost black, and much swollen. The patient's general condition was good.

Operation.—Patient was placed in the exaggerated dorsal position, a sound introduced into the urethra stopped in the bulbous portion. Median incision over the bulbous urethra revealed a laceration of the accelerator urinæ muscle on left side. The distal end of the torn urethra was readily found but it was impossible to find the proximal torn end. The incision was enlarged and a technic similar to that in Case 2 carried out, the tear was found at bulbomembranous junction. Rubber tissue drain from site of rupture to perineal surface was introduced, also from prostatic area.

The catheter was removed on the sixth day. Convalescence was uninterrupted. Patient was discharged Feb. 5, 1910, twenty-two days after operation. There was a slight leakage of urine at the time of discharge. This ceased within a week, the wound remained closed for ten days and then opened again for a few days, since which time there has been no leakage. On examination June 4, 1910, a 27 French sound was readily introduced. There was slight roughening at point of tear in urethral canal, urine negative.

CONCLUSIONS

1. Rupture at any point of the fixed portion of the male urethra is an injury of grave import.

2. The condition of the patient permitting, immediate operation to restore the integrity of the urethral canal is imperative.

3. Repair of the torn urethra at any point may be done through a median perineal incision.

4. Shock is to be overcome as a primary measure; leakage of urine in the early hours following traumatism is not to be feared.

5. Appropriate drainage is to be instituted as a prophylactic measure against infection.

6. Of great importance in the technic is the proper position of the patient.

924 Westinghouse Building.

ABSTRACT OF DISCUSSION

Dr. Harry M. Sherman, San Francisco: The mechanism by which the urethra may be wounded through a pelvic wound might be explained a little more explicitly. The two ossa innominata may be pressed together, as when force is applied on either side of the body, or they may be forced apart, as when the force is applied antero-posteriorly. If a force presses the two bones together, the urethra may be pinched off between the two descending rami of the pubic bone, or one bone may slide past the other, like the blades of a pair of scissors, thus cutting off the urethra. When this occurs, the urethral injury outranks the injury to the skeleton, and the possible extravasation of urine outranks the injury to the urethra. That is, when this accident occurs the extravasation of urine is the matter of major moment, and the one which requires most attention. The plans which have been detailed for the drainage of the different layers of areolar tissue are ample. Especially would I emphasize that which drains from the space of Retzius down behind the pubic bone, and so out through the perineum. Drainage is the keynote to the situation, so far as my experience goes with these cases.

Dr. George F. Corrigan, Newark, N. J.: Three or four months ago I had a case similar to the one described by Dr. Gaub. This man was going down in an elevator when the car slipped and he fell on a wheelbarrow, rupturing the perineum. He was brought to the hospital and several attempts were made to repair the damaged urethra. The openings in the urethra and neck of the bladder were closed; both operations failed, however. I propose in the next few weeks to operate on this man, and I am glad to have heard this paper. I fear that in doing an operation of this kind we must divert the urinary flow, in order to be successful. After the necessary preparation I will make an inverted Y-incision in the perineum, and dissect the rectum freely from the surrounding structures as well as the urethra, and endeavor to find the opening. I will pass a catheter or grooved staff after denuding the cicatricial tissue around the opening in the urethra, and then attempt to close the latter with chromicized catgut. If I do not go further, the operation will not be a success. I think that the proper procedure is to drain the bladder from above.

Dr. Parker Syms, New York City: Immediate drainage in these cases is the important factor in saving life. Immediate repair of the injury to the urethra is most important, when it can be done with safety. I desire to report what I consider to have been a surgical curiosity—an instance of this kind which came under my observation several years ago. A mining engineer fell astride a rock and sustained rupture of the urethra, with complete retention of urine. He had to travel nine days on mule-back before he could get any surgical aid. In the meantime, he had to rely on his own ingenuity. He constructed a catheter by putting a quill on the end of a reed and after much trouble and pain, he succeeded in relieving himself. The extreme lithotomy position is a great aid in exposing the deep portions of the perineum.

Dr. J. Hartley Anderson, Pittsburg: Rupture of the urethra back of the triangular ligament is one degree of a rupture which we see in fracture of the pelvis in which the prostate is also injured, and in which there is also an extraperitoneal rupture of the bladder. The operation which Dr. Gaub performed with considerable success is probably the most convenient for the lower part of the bladder, the prostate and the prostatic urethra. When there is a rupture of the bladder involving the anterior surface, the result of crushing force, it is necessary to make a suprapubic incision, and any attempt to suture the bladder in any other way will be found to be a difficult procedure. At the same time the suprapubic opening gives us the advantage of draining the prevesical space, and combined with the Proust incision drainage of the deep perineum.

The one thing that we find in these cases of ruptured urethra is the enormous displacement of the bladder where the true ligaments of the bladder are ruptured. We may find that the prostate is shoved up two or three inches, and it is almost impossible to reach it, but by making use of Young's retractors we are able to pull the bladder down and suture it into position. Drainage, especially if there has been extravasation of the urine, or an external perineal wound, is very important. The frequency of pelvic cellulitis is great, and if the fractured pubic bones are exposed, pelvic deformity and pyemia are after the results. Stricture and tortuous urethra are nearly always the final results of complete tears of the deep urethra.

Dr. Hugh Cabot, Boston: The care of these patients is twofold: (1) that required immediately after the injury, and (2) that of the stricture which is a necessary consequence. The most important element in the immediate care, is the provision for proper drainage of the bladder. The most difficult cases are those due to fracture of the pelvis which are not infrequently complicated by rupture of the bladder. Satisfactory drainage may be obtained either by combined suprapubic and perineal operation, or, in the less serious cases by simple perineal section. It has not seemed to me wise to attempt primary suture of the urethra, because of the unfavorable condition of the tissues. If the sutures are placed in the bruised tissue they will not hold and infiltration occurs and the patient is worse off than if a simple perineal section had been done and the stricture dealt with later, if necessary. It is, however, important at the time of the primary operation to restore the continuity of the roof of the canal, if this has been torn across. Unless this is attended to retraction of the cut ends will result in excessive scar and a stricture difficult to deal with. The restoration of the floor should be left to a subsequent time. The essential part of this stage in the operation is the free mobilization of the anterior urethra. The extent to which the urethra can be mobilized without damage to the circulation is surprising. In one case a gap of one and a half inches was closed by mobilizing the anterior urethra up to and somewhat forward of the peno-scrotal angle, the anterior segment being then sutured to the apex of the prostate. A perineal incision in the form of an inverted V gives good access to the prostate and membranous urethra and if the anterior portion of the urethra has been thoroughly mobilized the ends can be brought together without tension. The failures that I have seen after these operations have been due to fear of sufficiently mobilizing the anterior segment; it being believed that the blood supply which comes through the triangular ligament would be interfered with. This does not seem to me to be serious. The placing of an inlying catheter at the time of operation seems to me objectionable on account of the urethritis which it produces, with resulting infiltration, scar tissue formation and increase of stricture. Drainage by a perineal tube is, I think, to be preferred.

Dr. Hugh H. Young, Baltimore: I have had two somewhat similar cases. One was that of a fresh rupture of the urethra which occurred in a young man who was caught between two freight cars and sustained a fracture of the pelvis, and was unable to void urine. I found that there was complete rupture of the urethra just behind the triangular ligament. The space had filled up with blood clots; the bladder and prostate were pushed upward and an immense blood clot lay between them and the triangular ligament. The interesting thing in that case was the fact that the prostate was cut off from the external sphincter, but the bladder still retained a quart of fluid. The prostatic sphincter was sufficient to prevent the escape of urine from the bladder. I brought down the prostate and made an end-to-end anastomosis with the membranous urethra.

In order to avoid urethritis I brought the catheter out through a hole in the perineum, which gave excellent drainage. The catheter was left *in situ* for a week, and primary union was obtained. No sounds were passed. The man came back to me a year later; a sound passed easily showing the absence of stricture. He was in good condition, except that he had lost erectile powers. It is interesting to note that although no sounds were passed in this case a stricture did not form, probably because the suturing was done in the membranous urethra, where there is no surrounding cavernous tissue.

In cases of carcinoma of the prostate in which I have performed an anastomosis of the bladder with the membranous urethra, no stricture has resulted. Recently I saw a young man with a similar injury, who had been treated simply by suprapubic drainage. I found a mass of scar tissue and had to dissect it out before it was possible to make an anastomosis between the prostate and membranous urethra. The operation was much more difficult than in fresh cases, and I cannot recommend too highly immediate operation and suture of the divided urethra in all these cases of complete or almost complete rupture of the urethra.

Dr. Otto C. Gaub, Pittsburg: I searched for a new type of operation, as it had been the custom in Pittsburg to open bladders suprapubically and drain perineally—a retrograde catheterization. These patients remained in the hospital for a long while. There was infection of the cellular tissue in the space of Retzius, and the patients were incapacitated for months. Stricture followed, so that the idea of treating the ruptured urethra in the manner described occurred to me after having gone over the work done by Dr. Young. I followed the description of the operation which he performed for stricture of the urethra, in which he was obliged to do a retrograde urethral catheterization.

The point is well taken, that it may not be desirable to attempt complete suture of the urethra at the primary operation, but I would go so far as to say that we should restore the anterior wall of the canal. The advantage of the operation through the perineum is that we may stop at almost any stage. If the anterior wall of the urethra is reconstructed, the catheter acts as a splint, allowing the reparative processes to go on with very little scar formation.

Another point made by Dr. Young and emphasized in the paper, is the question of retention of urine. It is curious how these bladders will fill up and no leakage occur. In the third case reported in which the bladder was distended as high up as the umbilicus, at the time of operation, nine hours after injury, by putting a catheter into the bladder clear urine was found, showing that in cases of injury accompanied by severe shock, we need pay no attention to the bladder during the first two hours. The patient can be put into better shape and the severe urethral injury then attended to, restoring the canal entirely or in part, as may be indicated.

THE NEW TREATMENT OF SYPHILIS (EHRLICH-HATA)

OBSERVATIONS AND RESULTS

HENRY L. ELSNER, M.D.
Professor of Medicine, Syracuse University
SYRACUSE, N. Y.

If Ehrlich had ceased his labors after giving to the profession his original work on blood, which was an enormous factor in giving stability to the new-born art of hematology, and his studies on immunity, he would have continued to live as one of the masters of medicine. To-day Paul Ehrlich stands before the profession as the greatest living exponent of chemotherapy. His ceaseless labors have been rewarded by the discovery of a remedy, a chemical compound more specific in its effect against syphilis than any other yet introduced.

I am privileged to be able to preface what I have to offer with the positive statement that the bioxidiamidoarsenobenzoldichlorid, or the remedy labeled "606" (being the laboratory brand), is destructive to the *Treponema pallidum* (erroneously named *Spirochæta pallida,* which latter term, because of usage, I shall retain in this paper) and has a prompt and specific effect on syphilitic tissue.

Prompted by the favorable reports which during July and August of 1910 accumulated in the German medical press, I visited Ehrlich at his laboratory in Frankfurt July 12. My visit was most satisfactory. One is deeply impressed by the sincerity and scientific spirit of this man and his uniform courtesy. He is of a decidedly nervous temperament, systematic, continually on the *qui vive.* While engaged in conversation he becomes fascinating. His earnestness is striking at once. The subject which he is investigating has taken full possession of him. The conversation which I had with him led me to the conclusion that he had unbounded faith in the new remedy, but that he recognized the fact that before we are justified in reaching the conclusion that the late effects of syphilis would be entirely prevented by the remedy, we must pass through a long period of probation. As he expressed it "Es muss erst grundlich ausprobirt werden."

Ehrlich understands fully the object of *chemotherapy* —i. e., the production of such remedies as by powerfully affecting parasitic life cause a minimum of danger to the body which harbors them. To this splendid work he is devoting his life.

There are those who contend that Ehrlich's experiments are made only on mice and rats; but he has made clear that in order to reach safe conclusions all of these chemical products must first be tried on a variety of animals and that the remedy which after animal experimentation produces the most telling results is in all likelihood, after cautious dosage and thorough observation, the remedy which when given to man for therapeutic purposes will be likely to produce similar results. This conclusion was fully justified after animal experimentation at the Ehrlich laboratory with the various arsenic preparations, more particularly the arsenophenylglycin against trypanosomiasis, and the arsenobenzol against spirillum disease. The latter is the "606" of to-day, originally elaborated by Bertheim and used to destroy the spirillum of recurring fever by Hata and finally introduced by Ehrlich, Hata and Bertheim against the *Spirochæta pallida.*

Ehrlich has further convinced the profession that it is not possible in man to begin the use of poisons in the largest corresponding dose which is well tolerated in the animal *(dosis maxima bene tolerata).* In man we have idiosyncrasies to consider. The primary susceptibility and the acquired susceptibility offer the greatest obstruction to the use of poisonous drugs, and it is an uncontrovertible fact that all remedies which destroy living organisms in the blood or in the tissues of the body are poisonous. It has long been known that there are a number of poisons which nullify or completely destroy specific germs but the dose required, it has been found, is so large as to make it destructive to the host or to the individual organs; hence it is useless. It has been pointed out that poisons, to be of use in the economy against parasitic life, whether vegetable or animal, must leave vital organs undamaged just as do the antibodies. The further fact has become clear that remedies which destroy the living parasite must attract these offenders, "anchor" them; in other words, they must be parasitotropic. These same remedies are also organotropic; they are destructive to organic tissue; hence poisons to be of value chemotherapeutically must of necessity continue parasitotropic while the organotropic action must remain negative. The opinion is erroneously held by many that the spirochete is a blood-parasite. Leading syphilographers now hold that there is in all probability but one grand procession of the invading army of spirochetes through the blood-stream. Recent repeated examinations of the blood by Wechselmann, Loewenthal and Canon, seem to corroborate this conclusion. There are but few authoritative reports in medical literature which prove the continuous presence of the spirochetes in the blood. These parasites settle in the tissues of the body, causing in some cases and at some time, as a rule, a local reaction; in other cases no reaction follows, hence no late lesions.

Experience shows that the spirochete, or possibly its product, often resists specific treatment and this is unquestionably the case of tertiary lesions.

THE EHRLICH-HATA REMEDY—DOSE—PREPARATION FOR INJECTION

The drug "606" is a yellow, sulphur-colored powder. Its chemical formula is $C_{12}H_{12}O_2N_2As_2$. Bertheim elaborated the remedy. The average dose for men is 0.5 gm.; for women 0.45 gm. There is a tendency to increase this dose to 0.6 gm. in women and 0.8 in men. In all probability it will be found that the larger dose will be well borne and relapses will be reduced to a minimum. The dose for children ought not to be higher than 0.02. Wechselmann injects nursing babies with doses varying from 0.01 to 0.015 and even higher, and says that he has had no bad results. Certainly the clinical material which he presented abundantly proved the truth of his statement.

One would naturally suppose that it is easy to prepare the remedy for either intramuscular or intravenous injection. I myself shared this opinion with others who had never seen it used. Before Ehrlich sent me the remedy, after I wrote him that I was soon to leave Germany, he wisely suggested that because of the great difficulties of preparation those who were to use it might with profit visit some one of the leading centers of Germany where there was a large clinical material for the purpose of learning the method of its mixture, and the injection technic. In a letter received on August 10, Ehrlich suggested either Vienna, Berlin, Breslau or Magdeburg. I selected Berlin, where I visited at the Rudolph Virchow Spital, the clinic of Wechselmann, who has unquestionably had more experience with the use of "606" than any other man in Germany, and the Kraus clinic at the Charité, in which Citron had full charge of the material. The name of Citron is familiar to Americans who have visited medical Berlin. He is a genial, earnest worker and a delightful gentleman, thoroughly interested in his work, an excellent teacher and in all probability one of the best laboratory men on the Continent.

Wechselmann had injected over 600 patients before I left Berlin. The material at the Charité was not so large as that at the Rudolph Virchow Spital. Intravenous injection was not the favorite method of introducing the remedy in Berlin. At the Wechselmann and Kraus-Citron clinics the intramuscular method as originally recommended by Ehrlich was used. Ehrlich has recently reversed the first directions given and now recommends the intravenous method as more likely to prevent relapses and the late manifestations of syphilis, and agrees with those who claim prompter results than follows the intramuscular treatment.

METHOD OF PREPARING "606" FOR INTRA-MUSCULAR INJECTION

The entire method must include strictest asepsis; all glassware, everything used, must be thoroughly sterilized. The powder is emptied into an agate mortar, about 2 c.c. of a normal solution of sodium hydroxid is added and thoroughly mixed with the powder; a yellow thick alkaline fluid results. The alkalinity must be overcome by acetic acid. I have found it best to use the 1 per cent. solution of acetic acid instead of the glacial acid, using a little less than 0.5 c.c. of the former. If too much acetic acid is added it is necessary to overcome the acidity by a further addition of the sodium hydrate solution. In Berlin glacial acetic acid is used. If too much alkali is added to overcome the acidity after the addition of the acetic acid, then the 1 per cent. solution of acetic acid is again slowly added. The object, to reach a point at which the reaction will be absolutely neutral, must be kept constantly in mind. Litmus paper is used to test the reaction. It is wise, when it is neutral, to empty the preparation into centrifuge tubes. In preparing the remedy for injection, in order to save loss I have found it convenient to use the normal salt solution for holding in suspension the remnant left in the mortar and on the pestle. All of this is thoroughly centrifugalized. A light yellow colored powder is precipitated, after thorough sedimentation the supernatant fluid is removed by means of a pipette, and normal saline solution is added to hold the "606," which is withdrawn into a Record syringe. It is wise to suspend the remedy in at least 10 c.c. of saline fluid. The use of the normal saline for cleansing the mortar, spatula and pestle to prevent the loss of "606" which would otherwise remain and thus reduce the dose needed, has not been mentioned by others. I am thoroughly satisfied with this method of preparation because by its use I find less pain and less local irritation than I saw in Berlin.

THE PREPARATION FOR INTRAVENOUS INJECTION

Ehrlich has recently sent a circular letter to those to whom he has given "606," recommending the intravenous injection after the method fully described by Schreiber.[1] The method is as follows:

> Into a graduate holding 250 c.c. drop 10-20 c.c. of sterilized water. Add the required dose of "606" and mix thoroughly until there is a clear solution; add sterile water, or better, normal salt solution to the 100 c.c. mark; then add *pro* 0.1 of "606," 0.7 of normal sodium hydroxid solution and mix thoroughly until the precipitate is thoroughly redissolved. If after thorough mixture the solution is not clear add a few drops of the sodium hydroxid solution to produce this and then add sufficient normal salt solution to make 200-250 c.c. The fluids used are all to be warm. The alkaline mixture is then ready for injection. The Cassell syringe and apparatus (or the Weintraub) supplied for this purpose are preferable, for by their use the dangers of introducing air are reduced, if the operator continues cautious and follows the directions given in the original paper of Schreiber.
>
> It must be understood that all of the chemicals used in the preparation of the injection are to be kept thoroughly sterile.

I must repeat the warning of Ehrlich; unless the method of preparation of the remedy is to be materially simplified in the future no one should undertake its introduction into the body without first seeing the experienced mix and use it. I have seen Wechselmann's assistant work almost an hour before his mixture was neutral: Citron averaged between fifteen and twenty minutes in reaching that point. We succeeded in neutralizing the mixture in twenty minutes at our clinic when using the glacial acetic acid; with the 1 per cent. solution originally used by me we have prepared the mixture for the centrifuge in four minutes. It is as easy to prepare the mixture for a number of injections as it is for one.

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[1] München. med. Wchnschr., 1910, No. 39

I consider the use of the centrifuge in connection with the preparation of the remedy for intramuscular injection of great importance. This, I believe, was first suggested by Wechselmann.

I found that the patients in Berlin were given their choice of the seat of injection, choosing between the inframammary, the interscapular and the gluteal regions.

The patient's skin is to be as aseptic as if he were to undergo an operation. We have insisted on hospital care of all patients injected because of our limited experience with the remedy, and because Ehrlich in his final instructions insisted that we do not use the remedy on ambulatory material. This precaution I believe wise and necessary as my experience grows. The surface, after having been treated in the usual way, is painted with tincture of iodin. We have used no local anesthesia, but use a well-made and sharp needle of large caliber.

I saw several hundred of these patients while in Berlin; some had been injected, some were injected in my presence, and the best place for injection seems to be in the interscapular region. Immediately following the injection there is likely to be some pain. As the method of preparation is improved, the liquid made neutral and the remedy sufficiently diluted, we find pain reduced to a minimum. In the patients whom we have injected we have had no marked local reaction; there has been no redness, but little swelling, and only two patients required a small dose of morphin hypodermatically for the relief of the pain. These patients were hyperesthetic.

At the Wechselmann clinic were found a number of local reactions in which the skin was red—had an erysipelatous hue. From seven to fourteen, sometimes twenty-one, days after injection there was a distinct tender, fluctuating tumor, which might easily be mistaken for an abscess. It has been found, however, that no pus is present in these cases; that the injection does not lead to suppuration. In the patients thus far treated in Syracuse we have not found these persistent swellings; neither has the slight thickening which continues for several weeks proved annoying.

It is hardly necessary to repeat the histories of the patients injected at our clinic and in private practice. The improvement in all of those in which there were evident and palpable lesions has been surprisingly rapid. There are a few points of interest, however, in connection with some of these cases which I should like to mention.

In one of our patients on the eighth day after injection, without previous temperature above 100.2 F., and this only on the second day after injection, there was presented a temperature of 102 F., pulse 110, without return of syphilitic lesions. All specific lesions had disappeared. For three days he vomited at short intervals. There was no abdominal pain; no diarrhea; there were no physical signs. On the fourth day of these symptoms his temperature was 102 F., pulse 80, respirations 20. At 10 a. m. on the fifth day his temperature was 104 F., pulse 110, respirations 21. He had no diarrhea. His bowels were thoroughly emptied by a saline injection. At 1 p. m. his temperature was 102 F., pulse 82, respirations 20. On the sixth day his temperature was 101 F., pulse 80 and respirations 20 at 10 a. m. At 1:15 p. m. the temperature was 99 F., pulse 78, respirations 20; no recurrence of specific lesions. The highest temperature on the seventh day was 100 F.; on the eighth his entire body was covered with a rash which resembled the eruption of measles. There were no catarrhal symptoms referable to the bronchial tubes or nasal passages. The rash faded in three days. The patient on the twelfth day seemed perfectly well and was hungry. There were no evidences in the mouth, glands or on the skin of syphilitic lesions. The urine during this entire period was normal.

The symptoms might easily be explained on the theory that the death of the spirochetes produced endotoxins sufficient to poison the patient. The condition was not alarming at any time but gave us cause for reflection.

This experience has not been paralleled in my practice. In looking over the literature of the subject, however, I find that a number of injected patients have passed through afebrile periods which have been followed by a train of symptoms similar to those in the case reported.

It is surprising to note how promptly the enlarged glands in all recently infected patients disappear after the injection of the remedy and how deep and painful cracks are healed, promptly becoming painless.

In another case of tabes with continuous crises which we were prevailed on to inject we found before injection a negative Wassermann reaction which became positive within three days after the treatment. Similar experiences have been noted by others.

It is surprising to note how promptly the lesions of malignant congenital syphilis yield to the remedy. We found a boy aged 14 in our service, who had been thoroughly treated for deep and characteristic ulcers of the posterior pharyngeal wall with the older remedies for months, who yielded to arsenobenzol in less than seven days. The change in the appearance of the ulcers was striking before the end of thirty-six hours.

In a number of puzzling cases, particularly of skin lesions, we have used arsenobenzol for differential diagnosis with telling and satisfactory results. *Lesions which are syphilitic, palpable and visible, yield to the remedy. Lesions which do not so yield are not syphilitic.*

In all cases the general condition of the patients shows marked improvement: all are more buoyant; are taking on flesh, and look with hope to the future.

All of our cases emphasize the truth of Wechselmann's statement that the changes are so prompt that the lesions twenty-four hours after injection in the majority of cases are no longer satisfactorily demonstrable.

CONTRA-INDICATIONS TO THE USE OF "606"

Personally with my present limited experience I would refuse absolutely to inject any patient outside the walls of a well-appointed hospital, sanitarium or a home where thorough asepsis can be observed.

Sickness of any kind, particularly acute infections, however slight, including ordinary colds, bronchial disturbances and acute indigestions positively contra-indicate the use of "606." Ehrlich writes that patients with metasyphilitic diseases at the present time ought not to be injected because of the fact that a large number of these have already been injected and he wishes to gather the reports of the end results of the treatment before recommending the remedy for these conditions.

Degenerative diseases of the nervous system *far advanced* not only contra-indicate the treatment, according to Ehrlich, but offer direct danger. These include cases of paresis and locomotor ataxia, with associated optic neuritis., Under no circumstances are patients to be injected who have optic neuritis or other pathologic changes in the background of the eye. In these cases there is danger of sudden increase of ocular lesions or arsenical blindness. Aged and decrepit patients with advanced organic disease of vital organs, particularly affecting the cardiovascular system, arteriosclerosis, aneurism or cerebral apoplexy should never be injected. All organic diseases of non-syphilitic origin offer contra-indications.

In spite of these contra-indications which have received the sanction of Ehrlich, which in fact are insisted on by him, I saw in Berlin at the Wechselmann clinic one case of locomotor ataxia with optic neuritis in which the eye symptoms were not increased by the injection and in which the patient was thoroughly satisfied with the result. One case of tabes in which I gave an injection without bad results should in all probability be included among those which offer decided contra-indications. I believe that as our experience grows and we find that no direct harm comes to the patient from the injection in cases of incipient degenerative disease with continuous pain, we shall be justified in yielding to the strong temptation of using the remedy.

At no time should we forget that we are dealing with a poison; and I must again insist on emphasizing with all my force the very important fact that no patient is to be injected unless he continues to remain under the observation of the physician at least seven to fourteen days, preferably the latter time, and that no physician has a moral right to use the remedy unless he has acquainted himself thoroughly with the method of its mixture for injection.

THE WASSERMANN REACTION

Alt in his original work with arsenophenylglycin proved that the Wassermann reaction in syphilitics ultimately became negative. Wechselmann, Lange, Iversen and most observers who have used "606" are agreed that all patients with syphilis treated with arsenobenzol who are observed a sufficient time ultimately present a negative reaction. The only exception which was reported by these observers was in a nursing babe injected on March 17 with 0.02 gm. of "606" who died of intercurrent disease on the eleventh of June without change from positive Wassermann. The symptoms were all relieved. The necropsy showed no syphilitic remnant. In children, particularly young children, the negative Wassermann shows itself later than in adults. In a number of cases in adults and children a negative Wassermann has been followed after treatment by a positive reaction. In some this positive phase continues during a number of weeks, finally yields, becomes negative and remains so.

Statistics of collected cases prove that in patients who have been observed fifty days or longer 84.6 per cent. give a continuously negative Wassermann (Schreiber and Hoppe).

Of 268 patients who presented with a positive Wassermann, treated with the Ehrlich-Hata remedy, 153 became negative in from four to five weeks; eighteen cases, including one of malignant syphilis and one of locomotor ataxia, negative at the time of the injection continued so. It must be remembered that the majority of these patients had been treated with mercury or the iodid or by both, hence the negative Wassermann. In a number of cases in which the Wassermann became negative and then became positive, a second injection was followed by a continuous negative phase. As a rule the cases which become positive after the injection, if there are no evidences of active syphilis, finally merge into the negative state.

A positive Wassermann in any case is to be interpreted as evidence of constitutional syphilis, either hereditary or acquired. A negative Wassermann does not exclude the possibility of syphilitic infection.

It is surprising to note how many positive Wassermanns we are unearthing in conditions in which we have never before been able to demonstrate the true pathogenesis, though often strongly suspected. In Germany, particularly in Berlin, Citron and others are finding a surprisingly large number of positive Wassermann reactions in cases of cardiovascular disease. A large proportion of non-inflammatory aortic valvular and degenerative lesions have thus been shown to be due to syphilis.

The Germans have not departed from the original Wassermann technic and Lange makes the positive statement that the principles included have not yet been successfully replaced by other methods and must be rigorously followed.

VARIETIES OF LESIONS

The material which has justified this publication included a large number of malignant cases observed at the hospitals already mentioned which had been rigorously treated during long periods with our usual remedies, and under favorable conditions, without yielding. Among these were found deep-seated ulcers, cracks and thickenings about the genitals, syphilids affecting the scalp, faucial syphilis, syphilitic leukoderma, malignant types of congenital syphilis and serpiginous syphilids. None of these failed to show a favorable response to treatment. Not all of these, however, presented after treatment with entire disappearance of the lesions; occasionally a small nodule or ulcer remained. This was more likely to be true of the cases which were treated during the early days of "606," when smaller doses of the remedy were used than were finally found necessary. Wechselmann believes that in some of these cases in which the full dose was given and in which remnants remained, there is a syphilitic endarteritis which blocks the entrance of the remedy to the diseased area. In a number of these cases he administers the iodids during a limited period, believing that it opens the avenue through which the remedy reaches the distant lesion. I saw a number of these cases in which a second injection was followed by the prompt disappearance of the lesions. In a number of cases treated by Wechselmann there were positive evidences of relapse and a reappearance, more particularly of cutaneous lesions. He believes that this was due to either an insufficient dose or to the malignant nature of the infection, and in these cases he recommends a second injection after a reasonable period of observation, usually from six to eight weeks. Rupia yields to the treatment, as a rule, in from seven to fourteen days. At the Magdeburg clinic syphilitic epilepsy has been favorably influenced.

My observations justify the administration of arsenobenzol for the removal of gummata wherever located. Cases of brain, liver, and cutaneous deposits yield, in fact, melt away, after the injection. For brain gummata, when the diagnosis is made early, the treatment promises the prevention of the ultimate destruction of invaded tissue. Large liver gummata which threatened life have been cured in a few days. Kakeles reports a case in which exploratory operation disclosed the presence of an enormous non-operable mass, which proved to be a gumma of the liver, which was successfully treated with "606." The reporter says, "I have never seen a pathologic mass melt away so rapidly." No visible or palpable syphilitic lesion which I have seen has failed to be promptly influenced by the remedy.

It is safe to inject pregnant women who are syphilitic; the fetus is favorably influenced by the treatment as has been proved by several observers.

HEREDITARY SYPHILIS

Ehrlich reported at a recent meeting of the Aerztlicher Verein in Frankfort that hereditary syphilis can be cured by injecting the mother of the nursling without direct treatment of the babe.

Taege reports brilliant results in a case in which a syphilitic mother aged 19 gave birth to a babe which promptly developed pemphigus syphiliticus, nasal syphilis, paronychia syphilitica and other positive symptoms of syphilis. The mother was injected ten days after confinement and nursed the babe. For two days the symptoms in the babe increased; after five days the history showed that the lesions were all yielding and in fifteen days after the injection of the mother the babe had gained 1,400 gm. and was free of all signs of syphilis. The examination of the mother's milk failed to show the presence of organic arsenic and on the addition of hydrochloric acid and potassium chlorate only a faint trace of inorganic arsenic was discoverable.

Ehrlich believes that the sudden death of the spirochetes releases a large quantity of endotoxins which in turn are responsible for the formation of an antitoxin which is present in the mother's milk. Whether due to arsenic or to the antitoxin finally liberated, the results are positive and surprising.

Ehrlich is less disturbed by the direct effect of the arsenobenzol in the new-born babe than by the poisonous effect of the endotoxins resulting from the death of the millions of spirochetes which flood the body.

The rational treatment of congenital syphilis makes it necessary for the mother to nurse her babe, and that she be injected with "606" without delay. When this is impossible "however paradoxical this may be," Taege says, "the syphilitic nursling must have a syphilitic wet-nurse who has been treated with '606.' "

Meirowsky and Hartmann prompted by Taege's, Duhot's and Ehrlich's observations have used the blood-serum of injected mothers in the treatment of congenital syphilis with decided benefit, and they feel justified in concluding that the results would have been entirely satisfactory if they had had a sufficient supply of the serum. Examination of the serum injected showed traces of arsenic. They believe that the antitoxin in the serum and the small quantity of arsenic are in all likelihood responsible for the results obtained. This opens a new field of study which promises to lead to the early and prompt control of the ravages of congenital syphilis.

THE DESTRUCTION OF THE CONTAGIUM VIVUM

Unquestionably the most important, most far-reaching effect of "606" to mankind is its power of destroying the living contagion or the *Spirochæta pallida*. This at once places syphilis among the diseases which will ultimately be effaced, and that with more ease than any of the other infections. Syphilis becomes a controllable and preventable disease.

The injection of the subject is followed in from seven to ten days by the complete disappearance of the parasite. Süsskind places the time of its death at from six to seven days.

Iversen has experimented with chancre-juice removed by the Bier method to find that without exception the *Spirochætæ pallidæ*, which were originally demonstrated, had disappeared in two or three days after the injection. Better proof of the disappearance of the spirochetes was found by the same observer in his examination of the inguinal glands of ten patients, in all of whom spirochetes were present before the injection of "606." In three to four days after the treatment there were no demonstrable spirochetes in the same glands. Iversen concludes that if after five or six days in injected patients spirochetes are found in the inguinal glands complete sterilization has failed to follow and the patient must be subjected to a second injection.

INTRAMUSCULAR AND INTRAVENOUS METHODS

The relative advantages of the intramuscular and intravenous methods of introducing the Ehrlich-Hata remedy are being considered. As already mentioned, Ehrlich recommended the intramuscular injections until recently, when he became convinced that the intravenous is decidedly better. The experiences of Iversen and others are convincing. It is certain that the intravenous method is followed by the more prompt elimination of the arsenic, requiring four days, while with the intramuscular method this may continue for fourteen days. The pain, which by the newer method of mixture is materially reduced, is hardly to be considered a serious objection to the intramuscular method. The intravenous injection is almost always followed in two to three hours by chills, which continue at least thirty minutes, accompanied by elevation of temperature, aching, malaise, vomiting and diarrhea. Complications are not likely to follow in well-selected cases with either method if the necessary precautions are observed.

In malignant cases it has been suggested that the two methods be used together. It is best to give intravenously the largest possible safe dose in malignant cases at the present time. Unquestionably our methods will be materially simplified in the near future. I have heard of but one death attributable directly to the remedy in all of the thousands injected. It must be remembered, however, that the material has been carefully selected and the remedy has been in the hands of but few, and all under the instruction and guidance of Ehrlich, to whom we are morally responsible for every patient injected.

The reports which are presented may appear to those who have not seen the results of treatment to be unduly rose-colored. It is true that one can scarcely believe his eyes while watching the wonderful change which takes place in these lesions. Iversen of St. Petersburg says that it is naturally difficult to describe the effect of arsenobenzol on the lesions of syphilis. "These," he says, "must be seen and palpated that the result of the treatment may be thoroughly appreciated."

CONCLUSIONS

My experience with the remedy as I saw it used abroad and in my own private and hospital practice justifies the following conclusions:

1. The *treponema*, otherwise known as the *Spirochæta pallida*, is positively destroyed and the living contagion of syphilis is promptly removed by the Ehrlich-Hata remedy.
2. The preparation "606" promptly and favorably affects visible and palpable syphilitic lesions. It also removes deep-seated gummata.

3. The remedy stays the destructive and onward march of syphilitic ulcerations and causes their healing in a surprisingly short time.

4. It is more rapid in its effect on specific disease than any other known remedy.

5. It is likely to prove more valuable than any other remedy in the treatment of the specific diseases of most internal organs.

6. It cannot replace cicatricial tissue, the result of Nature's reparative processes; neither does it affect favorably chronic degenerative diseases of the nervous system, such as paresis, system-diseases of the cord, in which there is a break in the continuity of nerve structure, though in some cases it seems to influence favorably the continuous crises of locomotor ataxia.

7. In all cases it causes a leukocytosis and the formation of antibodies.

8. It materially modifies, and in most cases ultimately negatives, the Wassermann reaction.

9. It unquestionably floods the circulation with endotoxins resulting from the death of millions of spirochetes, and in all probability an antitoxin is developed in the blood-serum. These facts must be thoroughly considered in connection with the treatment.

10. In acute and threatening deposits in vital organs the effect of "606" will often prove life-saving because of its prompt action, and for that reason it is preferable to the iodids or mercury.

11. It ought not to be given to ambulatory patients; neither is it safe in the hands of the careless or those who have not seen it used and learned the difficult method of its preparation for injection.

12. The hospital, where all things required in the preparation of the mixture of "606" can be sterilized, and where the centrifuge can be used, is preferable to any other place for its injection.

13. Patients injected should be kept quiet and in bed during seven days under close observation, and for a longer period if indications demand.

14. Second injections, if indicated, should not be given in less than eight weeks after the first.

15. Contra-indications should be carefully considered before using the remedy. Patients with any other infection than that of syphilis should not be injected, however mild the former may be, until a safe period has lapsed after their recovery; neither should the feeble or old or those with other than syphilitic organic disease be injected.

16. Congenital syphilis demands the treatment, either directly or indirectly, as suggested in the paper.

17. The living contagion is destroyed by "606"; hence its early use can prevent the spread of syphilis. This subject demands the immediate attention of sanitarians and those directly interested in public health.

18. In occasional well-selected cases the use of the iodids after the method of Wechselmann will increase the efficacy of "606" when second injections are necessary. From two to three weeks should lapse after thorough mercurial treatment, when this has been used, before the injection of arsenobenzol.

19. In spite of the fact that nearly all agree that the effect of arsenobenzol is magical, sufficient time has not lapsed to justify the conclusion that a single injection of "606" will prevent what we now recognize as the secondary and tertiary stages of syphilis. Only after long years of careful observation shall we be able to reach a positive conclusion. It will be necessary therefore to keep injected patients under close observation.

406 East Genesee Street.

THE CULTIVATION OF TISSUES OF THE CHICK-EMBRYO OUTSIDE THE BODY *

MONTROSE T. BURROWS, M.D.
NEW HAVEN, CONN.

In 1907 Harrison described briefly before the Society of Experimental Biology and Medicine[1] a method which he had found successful for the growing of certain tissues of the frog embryo outside the body. Essentially the method consisted in dissecting the central nervous system, myotomes and skin of frog embryos free from the surrounding tissues and transplanting them to a drop of lymph taken from the lymph-sac of an adult frog and contained within a hollow slide. The lymph immediately clots about the tissue elements into a loose fibrin network. Harrison watched the growth of the axis-cylinder processes of nerves and the proliferation and wandering of epithelial and connective-tissue cells within this matrix. He further observed striated embryonic muscle cells to become differentiated from the preexisting cells of the myotomes. In other words, he was able to observe a certain amount of differentiation of the tissues over a short period of time.

Other fluids were employed, however, without success, viz., physiologic salt solution, Locke's solution, and gelatin; and the transplantation of the embryonic tissues to the ventricles of the brain of the frog was not followed by proliferation and development. It appears as though the fibrin network was essential in order to afford a supporting framework on which the cells can attach themselves and thus retain their tension. The fluid within the meshes of the network corresponds to the fluid bathing the cells in the living animal and provides the nutriment. The full details of Harrison's work are now in press and will appear in the *Journal of Experimental Zoology,* 1910. In the spring of 1910 Professor Harrison kindly permitted me to spend a few months in his laboratory in order that I might acquire under his own supervision the method of growing tissues outside the body. He had already concluded that lymph was not a wholly satisfactory medium for growth. Some of the reasons were the following: The clots produced from it were neither firm nor uniform. Small quantities of lymph could be obtained from a single animal that sufficed only for one or two preparations. Hence, large series of control preparations could not be secured. It became necessary, therefore, to obtain a more uniform and abundant medium in order that the conditions underlying the growth and differentiation of tissues might be subjected to close analysis. Such an abundant medium of constant composition would, theoretically, be supplied by the blood-plasma provided it could be obtained in suitable condition.

The particular object of my study with Professor Harrison was to adapt, if possible, his method to the investigation of the growth of the tissues of warm-blooded adult animals in order to continue and extend the study of the laws of the healing of wounds and regeneration of nerves, which subjects were at that time being actively studied by Dr. Carrel, with whom I was associated at the Rockefeller Institute.

In repeating the original experiments of Harrison I succeeded in substituting the blood-plasma of the adult frog for the lymph, and thus in overcoming some of the chief drawbacks which Harrison had encountered in his earlier work. The attempt was then made to cultivate tissues of chick embryos. The embryo of the chick offered the especial advantage of being procurable at any time throughout the year, and provided the opportunity for making observations on a warm-blooded species. Moreover, the tissues of the chick embryos are nourished at an early period from an extra-cellular yolk through the means of a well-established vascular system. Hence the removal of pieces of tissue from the embryo interrupts the vascular connections and eliminates all the nutriment derived from the yolk, so that opportunity is afforded not only for the study of growth of tissue, but also of problems of self-nutrition.

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* From the Sheffield Biological Laboratory, Yale University.

[1] Harrison, R. G.: Observations on Living Developing Nerve Fibers, Proc. Soc. Exper. Biol. and Med., 1905-1907, iii, 140; the Outgrowth of the Nerve Fiber as a Mode of Protoplasmic Movement, Jour. Exper. Zool., 1910, ix.

TECHNIC

The technic employed consists in placing a carefully isolated fragment of tissue of the chick-embryo in a drop of uncoagulated plasma derived from a chicken on a cover-glass. The cover-glass is inverted and sealed to a hollow slide and the preparation incubated at 39° C. The plasma immediately coagulates about the tissue and holds the fragment firmly fixed in a fibrin network. Preparations made in this way can be readily observed at all time under the microscope.

The success of the method depends on maintaining absolute asepsis and preventing undue chilling of the embryos or the completed specimens either during preparation or the later observation. In excising the fragment of tissue from the embryos they were floated in Ringer's solution and the operation carried out under a binocular microscope covered with an oven heated to 39 C.

The blood for the preparation of the plasma was obtained from young healthy adult chickens under ether anesthesia. The carotid artery is exposed and a cannula previously sterilized in olive-oil is inserted. The blood is collected in sterilized, paraffin-coated tubes which are cooled immediately by being plunged into an ice saltbath. The blood is next centrifugalized by placing the tubes in larger centrifuge tubes which contain a mixture of salt and ice. The supernatant plasma is removed by means of paraffin-coated pipettes and transferred to paraffin-coated receptacles which are kept in a refrigerator until used. The plasma so obtained is highly stabile and can be preserved in a fluid state for many days or even weeks. It should be stated, however, that in making control experiments plasma over four days old should never be used.

RESULTS

The method as described was employed especially during the past summer in the study of the growth of tissues of sixty-hour-old chick embryos. For this purpose isolated neural tubes, heart myotomes, and skin were employed. The results which we obtained can be stated briefly as follows:

The most actively growing elements in the preparations is the interstitial connective-tissue cells. These cells begin to spread into the plasma either as single cells or a layer of cells between the second and twelfth hours of incubation, as a rule, and the growth continues for from six to fourteen days. It often happens that a large part of the drop of fluid is filled with these cells. On being fixed and stained the preparations show mitotic figures to be very common in the proliferating cells. The muscular elements grow much less frequently and cellular outgrowths from them were observed in only about 3 per cent. of the experiments. The outgrowths take place from the myotomes and the heart and appear in the form of short chains of striated cells. The striated cells which are *outgrowths from the heart contract* rhythmically along with the portion of the heart from which they arise. The outgrowth from the nerve cells consists of long axis-cylinder processes which present the same morphologic appearances and react in the same way to specific nerve stains as those of the chick-embryo. The full account of these studies will appear in a forthcoming number of the *Journal of Experimental Zoology.*

The technic as here described for the frog and chick embryos has now been applied by Dr. Carrel and myself to the cultivation of tissues derived from embryonic and adult mammalian species, as has already been described in THE JOURNAL.[2]

I wish to express my great obligation to Professor Harrison, first for extending to me the privileges of his laboratory for the purpose of studying the method which he had developed for growing animal cells outside the body, and next, for the ready personal assistance which he gave me at all times. I wish also to thank Professor Mendel and Professor Rettger for permitting me to use the chemical and bacteriologic apparatus needed for this work.

THE RENAL ACTIVITY IN PREGNANT AND PUERPERAL WOMEN AS REVEALED BY THE PHENOLSULPHONEPHTHALEIN TEST *

F. C. GOLDSBOROUGH, M.D., AND F. C. AINLEY, M.D.
BALTIMORE

Rountree and Geraghty[1] have recently recommended the use of phenolsulphonephthalein as a means of determining the functional activity of the kidneys, and consider it greatly superior to methylene blue, rosanilin, indigocarmin and various other substances which have heretofore been used for that purpose.

The results which they obtained by its means were so satisfactory that we were led to hope that similar determinations might throw further light on the prognosis and treatment of certain cases of toxemia of pregnancy by showing some characteristic change in the functional activity of the kidneys. As it is known that marked alterations in the metabolism normally occur in the maternal organism under the influence of pregnancy and the puerperium, we subjected a number of normal pregnant and puerperal women to the test in order to determine to what extent their kidneys reacted to it, before applying it under diseased conditions. We employed the technic recommended by Rountree and Geraghty, which is as follows:

> Twenty to thirty minutes before administering the test the patient is given 300 or 400 c.c. of water by mouth in order to insure free urinary flow, as otherwise a delay in the appearance of the drug in the urine might be simply due to lack of secretion. The bladder is then completely emptied by means of a catheter introduced under aseptic precautions, and 1 c.c. of a carefully prepared solution containing 6 mg. of phenolsulphonephthalein to the cubic centimeter is administered subcutaneously either in the arm or the buttocks by means of an accurately graduated syringe. The time is

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[2] Carrel, Alexis, and Burrows, Montrose T.: Cultivation of Adult Tissues and Organs Outside the Body, THE JOURNAL A. M. A., Oct. 15, 1910, p. 1379; Cultivation of Sarcoma Outside of the Body, THE JOURNAL A. M. A., Oct. 29, 1910, lv, 1554.

* From the Obstetrical Department of the Johns Hopkins Hospital and University.

[1] Geraghty, J. T., and Rountree, L. G.: An Experimental and Clinical Study of the Functional Activity of the Kidneys by means of Phenolsulphonephthalein, Jour. Pharmacol. and Exper. Therap., July, 1910, p. 579.

accurately noted, and the urine as it is secreted is allowed to drain through the catheter into a test-tube containing one drop of a 25 per cent. sodium hydroxid solution, and a note made of the time elapsing until the appearance of the first faint pinkish tinge. Each sample of urine is measured and the specific gravity taken. A sufficient quantity of 25 per cent. sodium hydroxid solution is then added to make the urine decidedly alkaline so as to elicit the maximum color, as acid urine only becomes yellowish or orange, which immediately gives place to a brilliant purple red when it becomes alkaline. The sample is now placed in a liter measuring flask, mixed thoroughly with distilled water and accurately filled. A small filtered portion is then taken and compared with the standard used in all these determinations. This consists of 3 mg. of phenolsulphonephthalein diluted up to 1 liter and made alkaline by the addition of 1 or 2 drops of 25 per cent. sodium hydroxid solution, and forms a beautiful purplish red fluid, which retains its intensity of color for an indefinite period, so that a single preparation serves for an immense number of tests. On comparison of the diluted alkaline solution with the standard by means of a Duboscq colorimeter, the percentage of the drug eliminated is readily estimated.

Rountree and Geraghty obtained the following results in normal non-pregnant individuals:

> In normal cases the drug appears in the urine in from five to ten minutes, and 40 to 60 per cent. of the 6 mg. dose (the average being about 50 per cent.) is recovered in the first hour. From 15 to 25 per cent. of the drug administered is recovered in the second hour, making the total recovery for the two hours 61 to 85 per cent. We do not consider the time of the total elimination as of as much value as the amount of elimination for a definite period.

We have applied the test to ten women in the last month of pregnancy and to eleven women in the first two weeks of the puerperium, who were under observation in the obstetrical department of the Johns Hopkins Hospital. As far as could be shown by routine physical examination, urinary analysis and the course of pregnancy and the puerperium, all of them were normal. Twelve observations were made on the ten pregnant women, and one on each of the eleven puerperal patients; while the only variation from the technic of Rountree and Geraghty consisted in making the injections deeply into the muscles of the buttocks instead of into the arm; and we might add that the standard solution employed was kindly furnished us by Dr. Rountree.

Table 1 shows the results obtained in the pregnant women, from which it will be noted that it takes considerably longer for the drug to appear in the urine during normal pregnancy than in ordinary non-pregnant individuals; the average time elapsing being 14.6 minutes in the former as compared to five to ten minutes in the latter. We also observed decided variations in the different individuals, the shortest time of appearance being nine and the longest twenty-four minutes, but in no case did this appear to be dependent on a diminution in the amount of urine passed.

Moreover, in no instance was the total elimination during the first hour as great as that noted by Rountree and Geraghty as the lower limit of normal. In our series of cases the average percentage was 21.39 instead of 50, as in Rountree and Geraghty's normal non-pregnant subjects. We also noted a very marked variation in the different individuals, the extreme limits being 2.4 and 39 per cent. In the second hour the average percentage eliminated was slightly higher than the lower limit set by Rountree and Geraghty, being 26.54 per cent., with variations from 11.4 to 59.1 per cent. It would therefore appear that in normal pregnant women the rate of elimination is more rapid in the second than in the first hour, which is in marked contrast with the findings of Rountree and Geraghty, who demonstrated that normal non-pregnant individuals eliminated only one-half as much of the drug in the second as in the first hour. Some idea of the discrepancy between our results and theirs may be gained when we state that in seven of our twelve determinations the elimination was higher, in three approximately the same, and in only two lower in the second than in the first hour. Adding together the amount eliminated during the first and second hours, we find that the average was 47.93 per cent. with extremes of 13.8 and 65.7 per cent., while in only two instances did the total elimination fall within the limits established by Rountree and Geraghty in normal non-pregnant individuals.

TABLE 1.—RENAL ACTIVITY IN PREGNANT WOMEN AS INDICATED BY THE PHENOLSULPHONEPHTHALEIN TEST

			First Hour		Second Hour			
Obst. No.	Date of injection.	Time of appearance —minutes.	Amt. urine excreted, cc.	Percentage drug eliminated.	Amt. urine excreted, cc.	Percentage drug eliminated.	Percentage drug eliminated in 2 hrs.	Time before delivery—days.
4515	8/ 8/10	11	60	19.3	60	29.8	49.1	24
4522	8/11/10	24	35	3.5	120	59.1	62.6	?
4440	7/22/10	10	470	38.8	155	26.9	65.7	23
4489	7/23/10	13	95	12.9	70	16.7	29.6	17
4473	8/ 8/10	17	50	2.4	50	11.4	13.8	16
4473	8/16/10	23	115	23.8	90	23.3	47.1	8
4525	8/11/10	20	240	22.2	165	26	48.2	4
4497	7/28/10	15	100	24.3	140	32.2	56.5	3
4441	7/22/10	12	110	25.2	90	24.3	49.5	2
4485	7/23/10	11	125	39.0	50	18.5	57.5	1
4498	7/28/10	10	450	32.6	325	27.0	59.6	1
4489	8/ 8/10	9	230	12.7	120	23.3	36.0	1
Average		14.6	173.3	21.39	119.5	26.54	47.93	
Highest		24	470	39.0	325	59.1	65.7	
Lowest		9	35	2.4	50	11.4	13.8	

TABLE 2.—RESULTS OF TEST IN PUERPERAL WOMEN

			First Hour		Second Hour			
Obst. No.	Date of injection.	Time of appearance —minutes.	Amt. urine excreted, cc.	Percentage drug eliminated.	Amt. urine excreted, cc.	Percentage drug eliminated.	Percentage drug eliminated in 2 hrs.	Day of puerperium.
4511	8/ 9/10	10	370	34.2	340	30.5	64.7	6
4483	8/ 6/10	13	240	20	110	28.2	48.2	7
4489	8/16/10	10	300	51.7	85	11.1	62.8	8
4485	8/ 2/10	10	145	49.6	240	27.3	76.9	9
4441	8/ 2/10	13	140	27.1	95	30.3	57.4	9
4498	8/ 6/10	9	440	29.5	120	25.0	54.5	9
4487	7/26/10	15	125	41.8	300	20.3	62.1	10
4486	7/26/10	9	100	22.4	240	32.4	54.8	10
4497	8/ 9/10	8	475	20.2	540	35.2	55.4	10
4501	8/ 5/10	8	460	34.5	115	29.1	63.6	11
4500	8/ 5/10	6	290	58	125	12.6	70.6	11
Average		10.0	280.46	35.56	210	25.63	61.0	
Highest		15	475	58.0	540	35.2	76.9	
Lowest		6	100	20.0	85	11.1	48.2	

Table 2 shows the results obtained in the eleven puerperal patients. *In this series the time elapsing before* the appearance of the drug in the urine was approximately the same as that observed by Rountree and Geraghty in normal non-obstetric subjects. Moreover, the amount eliminated during the first hour approaches that observed by them, although the average elimination of 35.36 per cent. is considerably below their lower limit. In our series the high and low limits were 20 and 58 per cent. respectively, and in only four instances did the readings approximate Rountree and Geraghty's normal limits. In the second hour the average elimination was 25.63 per cent., which is slightly higher than the maximum noted by the above authors. In seven of our cases the elimination was greater, in two less, and in only two equal to their normal average. Although in our puerperal series the average percentage eliminated is greater in the first than in the second hour, the relative difference is not so great as is observed in non-obstetrical patients, and in several instances the figures for the second hour are higher than for the first. At the same time the total amount eliminated corresponds fairly well with Rountree and Geraghty's normal low limit, as the average was 61.0 per cent. with extremes of 48.2 and 76.9 per cent., while in six instances the readings fell within their normal limits.

Comparison of the results obtained in these two series of cases seems to indicate that several important points of difference exist in the renal activity of pregnant and puerperal women, which may be summarized as follows:

1. The average time elapsing before the appearance of the drug is shorter in the puerperium than in pregnancy, thus indicating diminished renal activity in the latter state. 2. In puerperal women the average amount of drug eliminated in the first hour is greater than in pregnant women, while in the second hour it is approximately identical in both groups. 3. The average total elimination is greater in the puerperium than in pregnancy. This is well exemplified in Table 3, which shows the results obtained in five women whose urine was examined both before and after delivery, and forcibly accentuates these points.

TABLE 3.—RESULTS OF TEST BOTH BEFORE AND AFTER DELIVERY

	—Pregnancy—			—Puerperium—		
Obst. No.	First Hour Percentage	Second Hour Percentage	Total Percentage	First Hour Percentage	Second Hour Percentage	Total Percentage
4484	39.0	18.5	57.5	49.6	27.3	76.9
4497	24.3	32.2	56.5	20.2	35.2	55.4
4411	25.2	24.3	49.5	27.1	30.3	57.4
4489	12.7	23.3	36.0	51.7	11.1	62.8
4498	32.6	27.0	59.6	29.5	25.0	54.5
Average	26.76	25.06	51.82	35.62	25.78	61.4

Notwithstanding the small number of cases studied, we consider that our findings show that pregnant and puerperal women react so differently to the phenolsulphonephthalein test, as compared with other non-pregnant individuals, as to indicate the existence of some radical change in the functional activity of the kidneys in the former. This being the case, great caution should be exercised in drawing conclusions from this test in toxemic conditions. We regret that we are unable to make definite statements in this regard. Unfortunately, neither of us, for the present at least, will be able to continue the work, but at the same time we feel that the results already obtained are sufficiently interesting to justify publication.

CONCLUSIONS

As the result of our investigations we feel that the following conclusions may be tentatively drawn:

1. Normal obstetrical patients eliminate phenolsulphonephthalein more slowly than normal non-pregnant individuals. Whether this is connected with the ordinary changes in metabolism observed at that time or is due to some other factor, we are at present unable to state.
2. In the last month of normal pregnancy the power to eliminate this drug may be very low, and falls far below the limits set for non-pregnant individuals.
3. Until more extensive observations are at hand we feel that this test should be applied with great caution in toxemic cases, although it is possible that further study will show that it may afford valuable diagnostic and prognostic information.

OBSTRUCTION OF BOWEL—DIETL'S CRISIS

REXWALD BROWN, M.D.

SANTA BARBARA, CALIF.

Patient.—Early Dec. 14, 1909, I was called to see Mrs. H. W. B. During the previous evening she had been stricken with intense abdominal pain, of sudden onset, the pain continuing with increasingly severe crampy exacerbations at intervals until I saw her. She had vomited twice within six hours.

Examination.—This revealed an extremely tender lump to the right of umbilicus. It was hard and seemed about the size of a tangerine orange. The patient said that the lump had appeared within the last two hours, and she was positive such condition had never existed before. The right rectus was very rigid and the right lumbar region was also on guard and sensitive. Bowels had moved previous to onset of pain, but not since. Pulse was 106, and weak volume, temperature 98.8 F. There were no urinary symptoms. The patient was frail, and had been a partial invalid for many years, suffering from a chronic phthisis pulmonalis. She had been under care of various physicians for abdominal and pelvic ailments, which at operation was found to be a general enteroptosis. The patient was hurried to Cottage Hospital and operation performed at once.

Operation.—Incision was made through the right rectus muscle. On entering the abdominal cavity the right kidney much enlarged and highly congested, presented through the opening. The kidney was displaced downward, rotated on a longitudinal axis through the mesonephron—the upper pole lay not far from the umbilicus—and was firmly bound along its whole length by old organic adhesions to the ascending colon and hepatic flexure. The ascending colon proximal to the hepatic flexure, was greatly distended and bluish black in color, the circulation was poor. The hepatic flexure was dragged on, stretched, compressed rotated and angulated, producing a mechanical obstruction of the bowel. The adhesions between the kidney and the hepatic flexure were severed, the obstruction was relieved and the kidney forced back as high as possible toward its normal bed. The patient's condition on the table was not good, and no attempt was made to anchor the kidney.

Postoperative History.—Convalescence was stormy, an immediate bronchopneumonia developed, and within two or three days appeared the phenomena of general septic invasion: chills, rapid pulse, and alternating high and subnormal temperature. Life was in the balance for two weeks and then convalescence ensued. Patient died five months later from the phthisis, there being no abdominal symptoms in the interval.

Strangulation ileus due to bands of adhesions is not a rare condition, however, in a short search of the available literature I am unable to find a case in which the twisting of a kidney pedicle—Dietl's crisis—has been a factor in causing adhesions to close bowel lumen and blood-current.

905 State Street.

AN EXTRACEREBELLAR TUMOR

EDWARD L. MOORHEAD, A.M., M.D.

CHICAGO

Extracerebellar tumors lie in the cerebello-pontine recess. They apparently arise from the acoustic nerve; usually grow slowly and it may be years before symptoms, produced by pressure on the lateral lobe of cerebellum and pons, to which they are adherent, appear.

This case was referred to me May 23, 1910:

History.—Mr. R. W., aged 58, married, a car repairer, born in Switzerland, had lived in America thirty years. His health had always been good. There was no specific history. Two years ago he had a discharge from the right ear which continued for about two weeks. He began to complain of deafness in the left ear about three years ago. Two years ago, he was struck under the right eye by a jack-handle, causing some swelling and discoloration. In February, 1910, he began to complain of being dizzy when he would stoop over. There was headache and a sense of fulness across the frontal region. The dizziness increased and late in April, 1910, he noticed that he began to stagger, the tendency being toward the left side.

Examination.—This revealed marked ataxia of cerebellar type, with tendency to fall to the left, left nerve deafness, partial right deafness (middle ear), slight weakness of left facial nerve, including upper branch; taste not involved; left corneal reflex absent, but no other evidence of fifth nerve involvement; no ocular paralysis. Tendon reflexes were slightly increased on both sides; there was no clonus; no Babinski sign; no sign of paresis of opposite side of body; no optic neuritis, but veins of disks rather full. In the examination of patient I was assisted by Dr. T. Faith, oculist; Dr. H. Kahn, aurist, and Dr. P. Bassoe, neurologist.

Diagnosis.—Tumor at left cerebello-pontine angle, probably a fibroma of the auditory nerve (left-sided deafness preceded vertigo by two or three years), but primary growth in cerebellum or pons, with pressure on auditory and facial nerves possible. At any rate, the growth was subtentorial and on the left side.

Treatment.—While there was nothing in the patient's history, or found on examination, to point to a syphilitic origin of the disease, yet it was thought advisable to put him on specific treatment for a time. He remained in the hospital for two weeks and then returned to his home. The treatment was pushed vigorously until July 4, a period of six weeks, without any effect, the patient growing worse, being now unable to walk without falling, unless assisted.

The patient and his family requested that I operate on him in the hope of obtaining some relief. He was readmitted to the hospital July 4 and prepared for operation.

Operation.—July 6 under ether anesthesia, the usual horseshoe-shaped incision was made through the soft parts. The skull was opened with Hudson trephine and the opening enlarged by Dahlgren forceps. No growth was found in the cerebellum, but high up, above the root of the cerebellum a dense mass was felt. As it was firmly attached to the pons, it could not be removed or brought into view. The wound was closed without drainage. During operation the anesthetic caused some trouble, the patient taking it badly.

The patient reacted from operation, but on the third day developed pneumonia, resulting in death the fourth day.

Necropsy Findings.—The specimen removed at the autopsy shows a fibroma about 3 cm. in its longest diameter and 2.5 cm. in its transverse diameter. It was firmly adherent to the side of the pons, its origin apparently being from the auditory nerve.

103 State Street.

Therapeutics

THE THYROID

(Continued from page 1983)

PATHOLOGY OF THE THYROID GLAND

1. The thyroid normally varies in size and in the amount of its secretion with age, sex, locality, and condition; the variations being greater in women than in men.

2. It may be inflamed, or there may be actual abscess formation.

3. It may be enlarged: (*a*) by an increase of the glandular tissue (hypertrophy); (*b*) by an increase of the colloid deposit; (*c*) by the formation of cysts; (*d*) by a dilatation of the blood-vessels, even to aneurysmal sacs; (*e*) by connective tissue development; (*f*) by tumor growth (sarcoma, cancer).

4. It may be decreased in size: (*a*) by connective tissue displacement of the glandular tissue—a sclerosis; (*b*) by general atrophy.

5. The gland may be large, and yet under-secrete.

6. The gland may be apparently small, and yet secrete sufficiently, and even hypersecrete.

Thyroid Congestion.—The thyroid probably becomes congested and stimulated with every infection, and Lorand, of Vienna (*Lancet*, London, Nov. 9, 1907) states his belief that the thyroid is an active agent in antagonizing all infections, and that when it is so stimulated, it is one cause of fever and the symptoms of fever, such as thirst, high temperature, sweating, nitrogenous loss, and wasting of the body. He believes that the thyroid is an active agent in fighting tuberculosis, and thinks that after a patient has gone through serious illnesses, or when some chronic depressing disease is present, the thyroid becomes worn out, and that is the time when tuberculosis readily attacks or develops in the patient. Whether or not we accept his conclusions as to the cause, the sequence is certainly a fact, that tuberculosis readily develops after typhoid fever, prolonged infection, prolonged alcoholism, after parturition, after prolonged lactation, and during diabetes. If his conclusions are correct, thyroid in small doses would be indicated in *tuberculosis*. But if the heart is rapid, as it generally is in this disease, thyroid should be given with care. Whether the iodin of thyroid extract would be a stimulant to the tuberculous process, as is an iodid, is a question that has not yet been decided. An iodid in active tuberculosis or in quiescent tuberculosis is more or less vicious in its action, sometimes stimulating the tuberculous process to activity, much as would tuberculin. In other words, an iodid should probably never be used in tuberculosis, especially of the lungs.

It seems to be a fact that after cured tuberculosis and after typhoid fever, diphtheria, and other serious infections, the thyroid tends to develop a greater amount of connective tissue, even if the glandular tissue does not actually atrophy. This may be one of the reasons that after severe infections arteriosclerosis is likely to occur earlier than in patients who have not suffered these illnesses, insufficient thyroid secretion tending to cause arteriosclerosis. Although congestion of the thyroid frequently occurs with infection or illness, active inflammation is rare, but it is more frequent than once thought. Actual suppuration is exceedingly rare.

Thyroid Hypertrophy.—Ordinarily, when the glandular tissue is hypertrophied, it is hypersecreting; and this may be on account of some necessary function of the body, as menstruation or pregnancy. If there is no such necessity for its hypertrophy and hypersecretion, abnormal symptoms occur, and if the condition progresses, exophthalmic goiter is the result. With this hypertrophy the blood-vessels are always enlarged and may become dilated to a condition of aneurysm. Aneurysm of a thyroid artery may be present without an increased glandular activity of the gland, but the two conditions are generally concomitant.

Increased colloid deposits and the formation of cysts produce an ordinary goiter; *i. e.*, an enlarged thyroid gland is present, but with no signs of its hypersecretion. An enlargement of the thyroid from connective tissue deposit sooner or later means under-secretion of the gland and symptoms indicative of hyposecretion.

If a tumor growth, like sarcoma or cancer, begins in some portion of the thyroid, the part of the gland not affected often becomes irritated to hypersecretion, so that symptoms from such increased secretion may be present as the tumor continues to grow. This is not always the case.

Thyroid Atrophy.—The thyroid normally atrophies after 45, and gradually developing symptoms of insufficient secretion occur. Premature shrinking of the gland may occur from connective tissue displacement of glandular tissue, a sclerosis, as above stated, from prolonged serious infections. If it is atrophied or its secretion is insufficient at or soon after birth, the child is a cretin. If it only partially secretes, with a probable disturbance of the pituitary gland (hypophysis cerebri), the child may grow large, but shows infantile obesity. If the gland ceases its secretion during adult life, or if the gland is removed by operation, myxedema is the result.

Thyroid Secretion.—The fact that a gland is palpable and large is no positive assurance that it is properly secreting. The symptoms which the patient gives and the signs which are found will determine whether its secretion is sufficient.

Occasionally a small thyroid gland is found and yet symptoms of hypersecretion are present. This, however, is a rarer condition than that of an enlargement and under-secretion.

STIMULANTS OF THE THYROID GLAND

Nervous tension, great sorrow, great joy, sexual excitement, genital disturbances (especially uterine), pregnancy, meat, coffee, tea, alcohol, arsenic, iodids, phosphorus, salicylic acid, pilocarpin, and, greatest of all stimulants, thyroid extract.

The hypersusceptibility of some patients to iodids, the so-called idiosyncrasy to these drugs, probably means that their thyroids are hypersusceptible to such stimulation. This susceptibility is most likely to occur in neurotic families.

DEPRESSANTS OF THE THYROID GLAND

Quiet, seclusion, rest, absence of all sexual excitation and all genital irritation, milk and cereal diet, glycerophosphates of lime and soda and perhaps all forms of calcium, opium in any form, ergot, bromids, chloral, and perhaps most hypnotics.

HYPERSECRETION

When the chemical analysis of the thyroid gland has reached perfection it will doubtless be found that although the histologic structure of the gland may seem normal, the secretions which it furnishes will be proved to vary greatly, both as to the amounts of the various elements and perhaps in their chemical structure. In other words, it will doubtless be found chemically, as we know clinically, that there are wide variations from the excessive secretion of all elements, as occurs in Graves' disease, to the diminished secretion of all elements, as occurs in myxedema, and that all of these variations from normal to the upper limit or Graves' disease, or from normal to the lower limit or myxedema, produce symptoms, the former from hypersecretion of some elements and the latter from hyposecretion of some elements.

The frequency with which the normal thyroid increases its activity in women, and the tendency in them for the gland to recede not rapidly to normal activity, is the cause of their excitable, nervous, and hysterical natures, and is also the reason that the final result of hypersecretion, Graves' disease, occurs four times as frequently in women as in men. The opposite is also true (as is so true of every glandular activity), *viz.*, that this gland is more likely to wear out, atrophy and hyposecrete in women after 45 than in men, and in the same ratio, 4 to 1.

There is a condition recognized as *thyroid instability*, *i. e.*, there are at one time symptoms of hypersecretion, and at another time symptoms of hyposecretion, or the secretion of the gland may be apparently normal, and there may occur crises of hypersecretion or disturbed secretion. Symptoms of this condition are evidenced by unexplainable and otherwise inexcusable asthmatic attacks, urticarial attacks, eczematous eruptions, diarrheas, subacute rheumatic attacks, unexplainable vomiting, and, perhaps, attacks of migraine, to say nothing of attacks of tachycardia. While many of these conditions may be otherwise explained, instances occur in neurotic patients when no one condition other than disturbance of the thyroid could cause so many apparently serious but self-limited conditions. The least that can be said is that such unexplained attacks should be studied from the standpoint of disturbance of the thyroid.

The evident conditions caused by hypersecretion are: (1) menstrual disturbances; (2) hysteria; (3) tachycardia; (4) symptoms of the menopause; (5) Graves' disease; (6) puerperal insanity; (7) acute mania.

1. The *profuse menstruation* of young girls is generally due to excessive activity of the thyroid gland, whereas its underactivity causes amenorrhea and chlorosis. Such girls with undersecretion or disturbed secretion may have peculiar nervous crises, perhaps even epileptic attacks, and the case is on record of one patient who was cataleptic. Women may also have profuse menstruation from too much thyroid secretion. The thyroid is also often at fault (*i. e.*, hypersecreting) when menstruation occurs too frequently, as every three or even every two weeks. This is especially true in young girls. The best treatment for this profuse menstruation or *menorrhagia*, when there is no apparent uterine reason, and also for this too frequent menstruation, is mammary extract, in tablet, to be crushed by the teeth and taken in doses of from 3 to 5 grains, three or four times a day. It is partially efficient in shortening a prolonged menstrual flow (its administration is best begun on the third day), but its best action is when administered during the interim between the periods. It will often postpone the period to the normal time, and prevent the flow from being profuse.

2. *Hysteria* has never yet been definitely defined. There has never been a lesion found; the condition has never been explained. What better etiology do we require to explain the manifold manifestations of hysteria than in disturbance of this emotional gland? Most hysterical symptoms are due to overactivity or disturbed activity of the gland, and it is perfectly natural that this gland, which is over-acting so many more times in women than in men, should cause them to be the ones most frequently to suffer from hysteria. It is hardly necessary to enumerate the hysterical manifestations to see how closely they coincide with known symptoms of thyroid hyperactivity. The crying, the laughing, the flushing, the sweating, the rapid heart, the pains without reason, and even the hysterical fever can all be accounted for by reference to the thyroid. The opposite, hysterical indifference, apathy, slow heart, hysterical moroseness, and even hysteroepilepsy, may be accounted for by subsecretion, or hyposecretion, of the thyroid.

3. It is merely begging the question to entitle a condition in a text-book as tachycardia, and yet this has been done for years. *Tachycardia* without a cardiac lesion or cardiac excuse, occurring often on least excitation, as after a cup of coffee or a glass of wine, or after mental excitation or any sudden nervous disturbance, or after any other intangible reason for rapid heart action, a paroxysmal misbehavior of the heart (not permanent, as occurs in Graves' disease), is undoubtedly

due to thyroid hyperactivity. Anything that will quiet the thyroid will stop the tachycardia. Of course such tachycardias tend soon to stop without treatment.

4. The so-called *menopause* symptoms are simply those of thyroid activity. They will be present in modified form or entirely absent if the menstruation ceases gradually and the thyroid thus gradually ceases its periodic hyperactivity. If the menstruation ceases rather abruptly, or there are long abrupt periods of intermittency, the thyroid persists in its cyclic hypertrophy and hyperactivity, and with the inability of the blood to rid itself of extra thyroid secretion by bleeding, the woman becomes intoxicated with the thyroid and develops symptoms, such as hot flashes, sweatings, palpitations, nervous irritability, restlessness, and perhaps actual hysteria. She may be relieved by bleeding from the nose, by diarrheas, polyuria, or in some other way, but she is miserable for several or more days until the period of the activity has passed. Little by little the gland will normally lessen its activity, and these symptoms disappear. If she again menstruates the relief which she gets is absolute until the next or permanent stoppage of menstruation. She will pass through this same condition if, for any reason, both ovaries are removed. Fortunately, this is now rarely done, as it has been learned that even a small piece of an ovary will functionate and prevent operative menopause. Any of the conditions or drugs named under those that tend to inhibit secretion of the thyroid are of value. Perhaps the drug of greatest value at this period is a bromid. Patients, however, having these uncomfortable menopause symptoms should be treated much on the plan of a mild Graves' disease.

The above symptoms of the menopause are very frequent and very constant, but that the symptoms of the menopause are due to a hyperactivity of the thyroid, is a fact even yet recognized by but few as the cause of the condition. Rarely the thyroid ceases its activity abruptly, or at least too greatly under-secretes soon after the menopause. Such patients rapidly put on weight, and, if the secretion is too greatly diminished, develop myxedema. Myxedema has been recognized for years as due to subcretion of the thyroid. Most women and many men put on weight after the age of 45, owing to a diminished thyroid secretion.

5. Graves' disease will be treated in the next article on thyroid.

6. The cause of *puerperal insanity* has not been explained. It is probable that this is due to a disturbed thyroid, and probably to a hypersecretion. During pregnancy the thyroid is hypersecreting, or at least should be hypersecreting, to care for the double metabolism of mother and fetus. If it is insufficient, symptoms occur, and if much insufficient, it may be a cause of puerperal eclampsia. That its increased secretion is utilized is shown by the fact that if a woman who is suffering from Graves' disease becomes pregnant she often suffers no symptoms of thyroidism during the pregnancy, but frequently the symptoms again occur after the pregnancy has terminated. However, it should be emphasized that a woman who has Graves' thyroid disease should not marry. From deductive reasoning, then, it would seem probable that puerperal insanity is due to abnormal activity of the thyroid.

7. There are certain forms of *acute mania* occurring as an intoxication, the causes of which have not yet been explained. It is possible that excessive thyroid secretion or disturbed thyroid secretion is the cause.

(To be continued)

GOOD SENSE IN PRESCRIBING

℞ Gm.
Digitalis ....
Quininæ sulphat āā .... 0.05 (gr. 1)
Extract gentianæ q. s. ut ft. pilula, d. tal. dos. No. xx.
Sig.: One or two pills three times daily.

It makes no difference whether Skoda (the alleged author of this pill) or some other man of equal or greater note first wrote or recommended this combination. It is not good sense. In the first place, the amounts in the prescription should be distinctly ordered by the prescriber, and then the amount divided into as many pills or capsules as the physician desires. The exact dose is thus supervised by both the physician and the pharmacist. In the above prescription there is only one to supervise the dose, and that is the pharmacist; in other words, he multiplies the dose by 20, and has no supervisor as to whether or not he makes a mistake.

In the next place, the amount of Latin required to write this prescription correctly, even with everything abbreviated, is unnecessary and uncalled for. If 1 gram (15 grains) of each of the active ingredients is ordered, and then the pharmacist is ordered to make 20 pills, the whole prescription is much simpler. The amount of the extract of gentian is entirely left to the decision of the pharmacist; in other words, it is not used at all as a drug, but is simply used as an excipient with which to make up the dry powders into pills. Why specify a pharmacopeial preparation for such a simple thing as an excipient? Whatever amount of gentian was used as the extract would be of no tonic value under any circumstances. Therefore, the excipient had much better be left to the pharmacist, if a pill is to be made.

It is always uncertain just when a pill of this description will dissolve and how much of the 0.05 gram of digitalis will ever give up its activity. If it is advisable to give digitalis in powdered form with quinin, how much better to order these two dry drugs placed dry in a capsule; then, as soon as the gelatin dissolves the powder is ready for chemical combinations and absorption.

The playing with strong drugs is inadvisable; digitalis leaves in dry powder and of uncertain strength combined in a sticky pill for slow disintegration and absorption is very uncertain, and if digitalis is actually needed, is too uncertain for scientific use. On the other hand, if digitalis is not needed, it is wrong to use a strong drug thus carelessly. With such a prescription, then, the patient gets better because of the other orders and his general management, and the prescription plays but a small part in the effect, except that on his mind. This of course is very valuable, but, if analyzed, it brings the physician into ridicule from the intelligent mental curist who knows that it is the general management and the impression on the mind rather than the prescription that did the work. If a prescription is to be written or a drug given for impression on the mind, let it not carry with it the uncertain activity of poisonous drugs.

The quinin in this prescription may become a tonic because, if enough of it is absorbed, it is more or less excreted by the saliva, and at the following meal food and drinks taste slightly bitter, and such a bitter is an appetizer. Also, quinin is a stimulant to the nervous system. The above dose of course is very small.

To sum up, if digitalis is needed it had better be administered in liquid form. If it is not needed, it should not be used at all. The extract of gentian plays no part in the therapeutic story. The small dose of quinin may be advisable in pill, tablet, or capsule.

ERGOT

Some splendid work on this drug has recently been completed by Dr. Horatio C. Wood, Jr., and Dr. Clarence A. Hofer, of Philadelphia. Their results and the tables of their experiments are published in the *Archives of Internal Medicine,* (October, 1910, p. 388).

It is a pleasure to note that they have pharmacologically determined what has been urged by a few men clinically, that ergot causes vasocontraction of the arteries and is probably a stimulant to the heart. In other words, ergot raises the blood-pressure and is of benefit to the heart. These investigators show that the action on the blood-vessels is due to peripheral action on the muscles in the blood-vessel walls, and not to action on the vasomotor center. They also show that the increase in blood-pressure caused by the drug is an accurate indicator of the activity of the ergot employed, and that the amount of the active principle of the drug, sphacelotoxin (a chemical union of the alkaloidal substance of the drug *hydro-ergotinin* with a resinous body) is also indicated by the rise in blood-pressure. Ergot is also a stimulant to all of the unstriped muscle tissue of the body.

Wood and Hofer also positively prove that the ergot on the market varies greatly in its active principle, *i. e.*, in its power to cause unstriped muscle stimulation. They also show that a perfectly prepared fluidextract rapidly and continuously loses its activity and becomes worthless. The crude drug also loses its activity on keeping. Therefore, they come to the conclusion that all liquid preparations of ergot should be kept in small bottles, hermetically sealed, and even then they think that the label should declare at what date it is manufactured, since, if a preparation is old, it is of but little value. Ordinary fluidextracts, even if not exposed to the air, will lose approximately 10 per cent. of their strength per month; hence the ordinary fluidextract on the market, bottles of which are frequently opened, lose their strength much more rapidly, and are really generally worthless.

Vaccine Therapy in Otology.—H. O. Reik in the *Laryngoscope* states that the employment of vaccine therapy in otology, although having had but a limited trial so far, has been attended by such successful results as to warrant us in feeling greatly encouraged. Furunculosis, with its recognized tendency to the formation of boils in crops, seems to have responded more promptly and satisfactorily to this form of treatment than to any other, and, in tuberculosis of the middle-ear, a condition heretofore so baffling to the otologist, there would seem to be a good reason to believe that at last we have a controlling, curative remedy. Looking into the future, there has been held out to us the enticing prospect of being able to cure without operation a larger percentage of patients with persistent chronic, purulent otitis media, or, failing in that, of insuring success for operative treatment of this affection. The aural conditions to which this new form of treatment would appear to be reasonably applicable are, Reik says, the treatment of chronic suppurative otitis media; the preparation of patients for operation, raising the opsonic index in order to facilitate rapid healing after obliteration of the gross lesions, and the postoperative treatment of mastoiditis and its complications, when healing is delayed and the patient is unable to construct new tissue without aid. While the outlook is hopeful in these several directions, we must not grow too enthusiastic as yet. We are perhaps justified in some degree of optimism but not in enthusiasm. Let us try the method further, with fairness and judiciously, Reik urges, not expecting the impossible of it, for it will not entirely displace any other form of treatment; no matter how valuable it ultimately becomes, it will only be an additional therapeutic measure at our command.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1910," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

[For list of articles which have already been mentioned in detail, see THE JOURNAL, page 1980, last week.]

ARBUTIN.—Arbutinum.—Arbutin, $C_{12}H_{16}O_7 + \frac{1}{2}H_2O$, is a glucosid occurring in the leaves of *Arctostaphylos Uva-ursi* Spr., *Vaccinium Vitis-Idaea L.* and many other genera of the family *Ericaceae*.

Arbutin occurs in long, glistening, colorless needles, or as a fine, white, crystalline, odorless powder having a bitter taste. It is soluble in 8 parts of water and 16 parts of alcohol; very soluble in hot water and hot alcohol; insoluble in chloroform, ether and carbon disulphid. Its aqueous solution is neutral to litmus paper and is not precipitated by solutions of the metallic salts or by solution of tannin. Its aqueous solution is colored blue by ferric chlorid test solution. By boiling with diluted sulphuric acid or by treatment with emulsin arbutin is converted into glucose and hydroquinone.

When heated to 100° C. (212° F.) arbutin loses its water of hydration. At 144° to 146° C. (291.2° to 294.8° F.) the anhydrous glucosid melts. It should leave no residue on ignition.

An aqueous solution of arbutin (1/20) should not be affected by hydrogen sulphid (absence of lead).

Actions and Uses.—Arbutin probably owes its effect, at least in part, to the antiseptic action of hydroquinone, formed by its decomposition in the urinary tract. It has been used as a urinary antiseptic and diuretic.

Dosage.—0.2 to 0.5 Gm. (2 to 7 grains) three or four times a day.

NUCLEIC ACID.—Acidium Nucleicum.—Nucleinic Acid.—Nucleic acid is an organic acid obtained from nuclein by the action of alkalies or by tryptic digestion.

Nucleic acid is an amorphous, white powder and has an acid reaction. It is readily soluble in ammoniacal or alkaline water with the formation of water-soluble salts. From these solutions it is precipitated by slight excess of hydrochloric acid but not by acetic acid. It is insoluble in alcohol and ether. When chemically pure it does not give the biuret test or Millon's reaction, but a slight response to these reagents does not indicate a degree of impurity incompatible with its use as a medicinal agent.

It should contain between 14.5 and 16.5 per cent. of nitrogen and between 8.5 and 10.5 per cent. of phosphorus, the relative proportion being 4 atoms of P to 14 or 16 N, approximately.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—0.06 to 0.3 Gm. (1 to 5 grains) three times a day.

Non-Proprietary Preparation:

Nucleinic Acid Merck (from Yeast).—Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).

ACNE VACCINE—A vaccine prepared from acne bacilli (Bacillus acnes). Said to be useful in the milder forms of acne.

H. K. Mulford Co., Philadelphia.

Acne-Bacterin. This product is marketed in four syringes containing respectively 25 million, 50 million, 100 million and 200 million killed acne bacilli, sold in a package or as separate syringes.

Dose. Initially 5 to 25 millions.

FRIEDLANDER VACCINE.—A vaccine prepared from the Friedlander bacillus. It is said to be useful in infections by the Friedlander bacillus, such as chronic nasal catarrh and chronic gleet.

H. K. Mulford Co., Philadelphia.

Friedlander Bacterin. This product is marketed in packages of four syringes, containing respectively 50 million, 100 million, 200 million and 400 million killed Friedlander bacilli. The single syringes may be obtained separately.

NORMAL HORSE SERUM.—(See N. N. R., p. 186).

H. K. Mulford Co., Philadelphia.

Normal Serum (From the Horse). Marketed in packages of two syringes, each containing 10 Cc.

ANTIMENINGOCOCCUS SERUM.—(See N. N. R., p. 172).

H. K. Mulford Co., Philadelphia.

Antimeningitis Serum. A serum prepared from the blood of horses immunized to the meningococcus of Weichselbaum (Diplococcus intracellularis), according to the method of Flexner (inoculation of autolyzed cultures followed by living organisms).

It is useful for the treatment of epidemic cerebrospinal meningitis, due to the meningococcus.

Dose. 15 to 30 Cc. (4 to 8 fluidrams) given by intraspinal injection For young infants, 10 Cc. (2½ fluidrams). The serum is marketed in aseptic glass syringes with sterilized needle.

STAPHYLOCOCCUS VACCINES.—(See N. N. R., p. 179).

H. K. Mulford Co., Philadelphia.

Four varieties of vaccine are offered:

1. *Staphylo-Albus Bacterin.* From staphylococcus pyogenes albus.
2. *Staphylo-Aureus Bacterin.* From Staphylococcus pyogenes aureus.
3. *Staphylo-Bacterin.* Containing a mixed culture of staphylococcus albus, aureus, and citreus.
4. *Staphylo-Acne-Bacterin.* A mixed vaccine prepared from cultures of staphylococcus albus, aureus, and citreus with bacillus acnes.

All the above are marketed in packages of four syringes containing respectively 250 million, 500 million, 1 billion and 2 billion killed staphylococci. The syringes of staphylo-acne bacterin contain in addition, respectively, 25 million, 50 million, 100 million and 200 million acne bacilli. The single syringes may be obtained separately.

TUBERCULOSIS SERUM VACCINE.—An emulsion of human tubercle bacilli, sensitized by the application of tuberculosis serum.

> The production of sensitized tubercle bacilli, or bacilli which are capable of complement fixation, is accomplished with the assistance of an efficient tuberculosis-immune serum, which has a considerable content of specific amboceptor antituberculin. The content of this serum in specific amboceptor is ascertained according to the method of complement fixation. Besides antituberculin, this serum contains agglutinating, precipitating and bacteriotrope immune bodies.
>
> Emulsions of sensitized tubercle bacilli are prepared as follows: Human tubercle bacilli, after having been thoroughly washed and briskly dried, are mixed with fresh tuberculosis serum, the quantity of which is calculated from the determination of the immunity bodies. This mixture is left for several days in the incubator, at a temperature of 37° C., and is then shaken in an apparatus, with glass beads, until intact tubercle bacilli are no longer demonstrable in the removed sample. The broken-up masses of bacilli are then separated from the serum, through centrifugalization, washed with physiologic salt solution, and finally worked into fine emulsions, with 40 per cent. glycerin water, to which has been added phenol 0.5 per cent. The contents of this emulsion in bacilliary substance amounts to 0.005 Gm. in 1 Cc. The original emulsions and dilutions are to all intents and purposes permanently durable, provided they are kept in a cool place, not exposed to freezing, and protected from the light.

Actions and Uses.—It is claimed that this emulsion contains specific immune bodies which are non-poisonous for healthy and tuberculous subjects, but are capable of exerting a remarkable effect on tuberculous processes.

Farbwerke vorm. Meister Lucius and Bruening, Hoechst, a. M., Germany. (Victor Koechl & Co., New York.)

Tuberculin "Koch" (old). Marketed in vials containing 1 Cc., 5 Cc. or 50 Cc.

New Tuberculin "Koch" (T. R.). Marketed in vials containing 1 Cc. and 5 Cc.

Koch's Bacilli Emulsion. Marketed in vials containing 1 Cc. and 5 Cc.

Tuberculosis Diagnostic "Hoechst." Dried tuberculin free from glycerin, prepared from Tuberculin Koch (old Tuberculin). To be used in 0.1 per cent. solutions for the tuberculo-ophthalmic reaction.

Tuberculosis Diagnostic "Hoechst" Dry in Tubes. Each tube contains 0.005 Gm. (1/10 grain).

Dosage. The contents of a tube are dissolved in 5 Cc. of cold sterile water.

Tuberculosis Diagnostic "Hoechst" 0.1 per cent. solution.

Dosage. The contents of the tube are ready for use.

Tuberculin T. O. A. Original Tuberculin T. O. A. This preparation is a bouillon filtrate. For preparation see Tuberculin "Deny's," N. N. R., p. 181. Supplied in bottles containing 1 Cc. and 5 Cc.

Vacuum Tuberculin. Tuberculin T. O. A. reduced to 1/10 of its volume in a partial vacuum at a low temperature.

Actions and Uses. It is intended solely for the treatment of patients who exhibit too violent reactions to Old Tuberculin, to Tuberculin T. R. and to Tuberculin Bacilli Emulsion.

Vacuum Tuberculin is marketed in glass bottles containing 1 Cc. and 5 Cc.

Dry Dead Tubercle Germs. For use in making the bacillary emulsion for the tuberculo-opsonic test.

Bovine Tuberculin. Tuberculin corresponding to Tuberculin "Koch" Old but prepared from bovine bacilli. Marketed in bottles containing 1 Cc or 5 Cc.

Bovine Bacilli Emulsion Corresponding to Koch's Bacilli Emulsion but prepared from bovine bacilli. In original bottles containing 1 Cc. and 5 Cc.

Bovine Tuberculin T. R. Corresponding to Tuberculin T. R. but prepared from bovine bacilli. In bottles containing 1 Cc.

Bovine Tuberculin Old. A bouillon filtrate from bovine bacilli. Indications similar to those for Tuberculin T. O. A. Supplied in glass bottles containing 1 Cc. and 5 Cc.

Vacuum Bovine Tuberculin. A tuberculin prepared from bovine bacilli by the process for vacuum tuberculin. The advantage of the vacuum preparations is only in their better keeping qualities. Vacuum bovine tuberculin is supplied in glass bottles containing 1 Cc. and 5 Cc.

Polygenous Tubercle Bacilli Emulsion. A bacilli emulsion prepared from eight different cultures of tubercle bacilli which differ as much as possible from each other.

Dead Bovine Tubercle Bacilli. Supplied in flasks containing 1 Gm. and 5 Gm.

Tuberculin Residue. Tuberculin residue is supplied in the form of a moist paste and a dry preparation in vials of 1 Gm. and 5 Gm. each.

Tuberculosis Serum Vaccine "Hoechst." Emulsions of sensitized tubercle bacilli are supplied in the original concentration, in vials of 1 and 5 Cc. each, and also in serial dilutions.

Dosage. The treatment is begun with 0.1 Cc. of a dilution 1/1,000,000 and the dose gradually increased until 0.5 Cc. of the original emulsions are readily tolerated and the corresponding clinical effects are demonstrable. It should not be used in the presence of cachexia, mixed infection or permanent rise of temperature.

Tuberculin Gesellschaft, St. Petersburg, Russia. (Morgenstern & Co., New York.)

Endotin.—Tuberculinum Purum. Endotin is the purified extract of a filtered culture of human bacilli in 50 per cent. glycerin.

Endotin is prepared exactly as Koch's "Old" tuberculin, but is subsequently treated with alcohol, ether, chloroform and xylol in order to eliminate the deuteroalbumoses present.

Tuberculinum purum is now supplied in a carton of 4 series which are intended to represent a course of tuberculin treatment. Each series consists of 7 ampuls.

Noguchi Test for Syphilis

Noguchi test for syphilis is a modification of the method of Wassermann and involves the use of two standardized papers as follows:

Amboceptor Paper.—This is obtained by injecting washed human blood corpuscles (erythrocytes) into rabbits, at intervals of five to seven days, over a period of five or six weeks. Ten days are allowed to elapse after the last injection. The rabbits are then bled and the serum collected. Filter paper is now saturated with this serum and allowed to dry. The paper is cut in strips and set aside until wanted for use. In this form amboceptor will keep for a considerable length of time.

Amboceptor paper is standardized by measuring its specific activity. The measurement of specific activity consists of finding the amount of amboceptor necessary to cause hemolysis in 1 Cc. of suspended human red corpuscles, one drop of blood in 4 Cc. normal saline solution with 0.02 Cc. of fresh guinea-pig serum. Incubate this at a temperature of 37½ C. for one hour. The quantity of paper necessary to cause hemolysis under these conditions is known as 1 unit.

Antigen Paper.—Antigen is made by rubbing liver tissue with sand and extracting with alcohol. One Gm. of liver tissue is macerated in 10 Cc. of alcohol for one week at 37.5 C., shaking the container every day. It is filtered until clear and the filtrate evaporated. The resulting extract is dissolved in ether and this solution poured into a large quantity of acetone. The acetone precipitates certain lipoid substances, which are then collected and redissolved in ether-alcohol and constitute the antigen. Antigen papers are now prepared by saturating filter paper with this solution and allowing it to dry, after which it is cut into strips. The unit of standardization is the amount of antigen paper necessary to prevent hemolysis of human red corpuscles in the presence of syphilitic serum. The antigen paper must not of itself cause hemolysis.

H. K. Mulford Co., Philadelphia.

Noguchi Test Mulford. Noguchi test Mulford consists of amboceptor paper and antigen paper in a package accompanied with full directions for use.

Amboceptor Paper. Amboceptor paper is marketed in a glass tube.

Antigen Paper. Antigen paper is marketed in tubes containing acetone, because it is believed to prevent oxidation. When wanted for use, a strip of the paper is removed from the vial and the acetone allowed to evaporate.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 10, 1910

KOCH'S LAST WORD ON TUBERCULOSIS

Shortly before he died, Robert Koch delivered an interesting lecture in the Academy of Sciences in Berlin on the epidemiology of tuberculosis This lecture has now been published[1] In it Koch discusses certain statistics bearing on the death rate of pulmonary tuberculosis, or phthisis, which is the most favorable form of tuberculosis for statistical purposes

It appears that the first reliable statistics were gathered in Sweden and that in the middle of the eighteenth century the mortality in Sweden for the country was 21 5 per ten thousand of the living population and for Stockholm 73 2 The rate rose slowly and steadily far into the nineteenth century, owing, it was thought, to the abuse of alcohol

One of the most remarkable features in the epidemiology of tuberculosis is the lowered death-rate during more recent years, and it is to this phase that Koch directs especial attention At first the statistics showing decrease were received with skepticism, but as the decrease became more and more general, it became an accepted fact Koch gives curves showing that in Prussia a decrease commenced in 1886, which has been going on fairly regularly since, so that in 1908 the death rate had fallen 50 per cent The curve for the whole of Germany resembles very much that for Prussia If the conditions that obtained in Germany thirty years ago had continued up to the present, something like a hundred thousand human beings more per year would have died from pulmonary tuberculosis Consequently it becomes a matter of the greatest importance to discover, if possible the causes of the decrease with a view to favoring its rate and its continuance

As the death-rate of pulmonary tuberculosis falls more rapidly than the general death-rate, which is also decreasing, there must be factors at work that are peculiar for tuberculosis If the decrease depends on something inherent in the nature of tuberculosis so that the disease was bound to decrease of itself, then the decrease should take place in a uniform manner everywhere But this is not the case There are countries in which the disease has been increasing, notably Ireland, Norway, until very recently, and Japan In Paris the curve shows little tendency to go down It appears also that in New York and especially in Berlin the decrease has been less during the last few years than previously There are also difficulties in the way of explaining the fall in the mortality of pulmonary tuberculosis by any sudden loss in virulence of the disease

The fall in the death-rate of tuberculosis is often brought into relation with the discovery of the bacillus This established the transmissible character of the disease and naturally led to preventive measures Thus it is remarkable that with few exceptions the decrease begins almost everywhere within a few years after this discovery There are, however, exceptions to this connection Koch finds the conditions in Great Britain especially interesting. As is well known, the death-rate from tuberculosis is decreasing in England and Scotland and increasing, although slowly, in Ireland. Newsholme, who has studied this question with the greatest care and from all sides, reached the conclusion that the modes of caring for the tuberculous poor form the determining factor in England and Scotland they are cared for in institutions, whereas in Ireland they are not necessarily so cared for This was the case in Norway also until recently; since special institutions began to be established the death-rate has fallen In Paris also there is a lack of suitable hospitals Koch supports Newsholme, in no other way is the danger of infection from a phthisical patient so thoroughly avoided as by isolation in a hospital In leprosy we have a striking example of the preventive effect of isolation and hospital treatment

Koch then goes on to discuss the importance of the character of the living-rooms and more particularly the sleeping-rooms with respect to the spread of tuberculosis. In Germany the highest mortality is not in the poorest districts, but in relatively prosperous regions along the North Sea, where it is the custom to place the beds in small cell-like rooms or cubicles which are carefully closed during the night, and he would trace the greater death rate in certain parts of the country as compared with cities as dependent in many cases on the facilities for infection afforded by the confined sleeping-room. The great danger of infection from phthisical patients in lodgings of one room is self-evident He reaches the final conclusion that the decrease in tuberculosis of the lungs is dependent on various factors, the two most important being isolation of patients in hospitals and improvement of the sleeping-rooms and living-rooms

Great difficulties are still in the way before the mortality can be depressed to the lowest possible level The exact statistical determination of the mortality of tuberculosis has been and will be of great value, because the mortality curve at once indicates whether the measures employed are effective Thus, New York City, when its curve began to flatten out, at once resolved to increase its hospital facilities. The same is true of Berlin. To penetrate as deeply as possible into the situation, exact studies should be conducted of smaller districts and towns. Only by so doing will it be possible to secure the greatest help from the lessons obtained from the mortality statistics of tuberculosis. In conclusion we may say then that Koch's last word on tuberculosis is that mortality statistics, carefully obtained and intelligently studied, constitute important factors in our understanding of the subject, which we should utilize to the fullest possible extent as an aid in the prevention of tuberculosis.

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[1] Koch Ztsch f Hyg u Infektionskr, 1910, lxxii, 1, and Berlin Letter, The Journal Nov 26, 1910, p 1904

THE SEPTIC TANK

The interest that has been expressed in our recent editorial on the septic tank,[1] and the number of inquiries received regarding additional data on the subject, make it seem worth while to give a few supplementary details. The septic tank owes its rather singular name to Donald Cameron of Exeter, England, through whose work about fifteen years ago the so-called septic process of treating sewage first became prominent. The observations on which the process is based are first, the settling out on standing of a considerable proportion of the suspended particles in sewage leading to a sediment or sludge formation, and, second, the dissolving of a part of the sludge, presumably through the activity of bacteria or their enzymes. The partial freeing of sewage from suspended particles by sedimentation was nothing novel, since the advantages of settling tanks, particularly in connection with chemical precipitation, had long been known. On the other hand, the digestion of some of the solid matter of the sewage within the septic tank was supposed to be a feature of very great value. Furthermore, it was believed, although the evidence on this point was never very convincing, that the effluent from septic tanks could be more effectively dealt with than fresh sewage by biologic after-treatment, such as application to contact beds or sprinkling filters. Roughly speaking, then, the septic tank may be looked on as a kind of settling-tank in which the sewage is retained long enough to permit of a diminution in the amount of the sludge and of other chemical changes. The main difference between the settling-tank and the septic tank is the length of time of retention of the sewage.

The diminution of sludge, such as it is, is undoubtedly an advantage. In the early days of septic tank experimentation the amount of sludge digestion seems to have been overestimated. On this point Dunbar of Hamburg, one of the leading students of sewage disposal, writes: "At first it was maintained that the sludge was entirely liquefied and gasified; then that its volume was reduced by 50 per cent., and, as a result of the most recent investigations of which I am aware, it is stated that the amount of sludge is not reduced by more than 9 per cent." For some reason, at present not clearly understood, there seems to be a high degree of variation in the percentage of sludge digestion effected in different septic tanks. Probably differences in the composition of the sewage, in climatic conditions, in size of tank employed and other local factors are in part responsible for the wide range of variation in sludge digestion.

At one time much was hoped from the septic tank in the way of providing a clear and favorable effluent for biologic after-treatment. It was even said with an appearance of precision that the anaerobic changes which took place in the septic tank were essential to prepare the sewage for the aerobic or nitrifying changes which occurred in the filter-bed. On this point faith in the septic tank as a useful adjunct to the purification process has suffered its most grievous disappointment. The effluent from the septic tank is no easier to purify than fresh sewage; indeed, it is more difficult. There is now everywhere agreement among sewage-works engineers that septic action retards rather than facilitates purification both on filter-beds and irrigation fields. The well-known sanitary engineer, Rudolph Hering, has recently expressed the prevailing view where he says that "there is being more and more recognized, on the one hand, the disadvantage of treating foul instead of fresh sewage and the further disadvantage of passing sewage through septic tanks; and on the other hand, the advantage of passing thin layers of fairly fresh sewage over extensive surfaces, exposed to simple attracting forces which segregate the suspended matters."[2]

In answer to the question, therefore, what is gained by allowing a sewage to remain in a settling-tank long enough for decomposition to take place, the reply must be that practically no advantage is obtained. The elaborate experiments which were carried out by Winslow and Phelps[3] on the purification of the sewage of Boston led to the conclusion that the septic tank treatment affords no particular advantage. On the contrary they say: "Since November, 1906, when the distribution system was put in order, crude sewage has been treated on one of our trickling beds with perfect success. The effluent from this filter was less frequently putrescible than that from the bed which received septic effluent. The filter taking septic effluent showed a deposit on its floor, due to secondary reducing changes, which was absent from the crude sewage bed. Furthermore, the absence of the odors produced by spraying septic sewage is an advantage of considerable moment in favor of the process of treating fresh sewage." Recent experiments at Gloversville, N. Y., where the sewage contains a large amount of industrial waste from tanneries, have led to similar conclusions and have shown that while the amount of sludge produced by the septic process is somewhat less than that obtained by sedimentation, this advantage is nullified in other ways as in the tendency towards an increased amount of suspended matter in the septic tank effluent.

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[1] The Rise and Fall of the Septic Tank, The Journal A. M. A., Nov. 5, 1910, p. 1650

[2] Hering, R.: [illegible] 6, 1910.

[3] Winslow and [illegible] from Sanitary Research Laboratory, Mass. I[illegible]

On the whole, then, it may be said that apart from the advantages that may also be obtained by simple sedimentation (four hours or less), the septic tank has little to recommend it. The slightly increased digestion of sludge is in large degree counterbalanced by the added difficulty of treating the septic effluent. The prevailing opinion among students of the sewage disposal problem is that there is no substantial gain from retaining sewage in tanks until decomposition has set in, but that on the contrary the practice is often distinctly disadvantageous as compared with mechanical sedimentation for a brief period.

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Mrs. Eddy has been more fortunate than many other founders of cults and religious teachers. Some of these died before they saw the wide-spread acceptance of their peculiar doctrines, whereas at Mrs. Eddy's death her teachings were followed by thousands in various parts of the world. The beginnings of most movements of this character, and in many cases the personalities of their founders as well, have been shrouded in a veil of mysticism, which has lent an increased attraction and fascination to the susceptible convert and follower. A modern substitute for this mysticism has been afforded to some extent in recent years by the discreet reserve with which Mrs. Eddy's personality has been shielded from public observation. At the same time, the serene unreason of her doctrines has a certain fascination for some otherwise literal-minded individuals, who apparently find in these doctrines and formulas an unforeseen avenue of escape from the harsh tyranny of fact. Perhaps, after all, it is not strange that it should be in the age of material progress—of steam printing-presses, of electric railways and of telegraphs and telephones—that Berkeley's easy short cut out of theoretical materialism should be made the basis of a new cult. "When Berkeley says there is no matter, it is no matter what he says"; but when thousands of people repeat devoutly after Mrs. Eddy, "Mind is all; all is mind" the affair cannot be so lightly dismissed. And on the other hand, not only have modern (and material) methods of communication made possible an unprecedentedly rapid spread of the new cult, but the adherents of that cult have shown a marvelous aptitude for acquiring and making use of those highly esteemed nonentities, cash and credit—and the newspapers. Still, that an unknown, uneducated and almost friendless woman could, from the fifty-sixth to the eighty-ninth years of her life, adapt a creed and establish a cult which would attract many thousands of adherents and draw the attention of the world, cannot but be regarded as a strange and unique chapter in the history of human beliefs and religious vagaries.

It is impossible to determine, at present, what effect her death will have on the movement which she inaugurated. Some years ago it might have precipitated a collapse, but conditions have changed. It must be remembered that for a number of years, Mrs. Eddy has been eliminated from the actual management of the affairs of her following by a well-organized group of experienced business promoters. The principal effect of her death, therefore, for the time being at least, will be a sentimental one. One prophecy, however, may be safely made in the light of the history of other religious movements: the cult will not continue long in its present condition. But whether it will suddenly fall to pieces, as did the following of Dowie after his death, or whether, gradually losing its peculiar features, it will become one of the conventional religious bodies, as have so many similar movements; or whether, broken into warring factions by ambitious and rival leaders, it will gradually disintegrate, time alone will tell. Whatever fate awaits it, however, it is safe to predict, judging from similar movements of the past, that it has reached its high-water mark.

Current Comment

BUSINESS PHILANTHROPY

The linking of the terms "business" and "philanthropy" seems at first sight to be an incongruity or a paradox; and yet business philanthropy is philanthropy in its most effective form. An example of this form of philanthropy is described by Dr. George M. Sternberg[1] in an article on the improvement of housing conditions among the working classes as a factor in the reduction of tuberculosis. In the city of Washington, with its large colored population, with a tendency to overcrowding, tuberculosis has been very prevalent, and this is true also of the white laboring population. As a means of improving the situation and at the same time of securing a reasonable return on the investment, in 1898, Dr. Sternberg, together with some other public-spirited citizens, organized a company for the building of apartments for the laboring classes, which would provide light and air and be equipped with all sanitary conveniences, and which might be rented at a rental compatible with the incomes of that class of people. The houses constructed by this company, and also by other real-estate owners, are of the two-flat type, each flat being entirely independent, having three to five rooms, bath and all sanitary conveniences, and provided with a separate yard. These houses present an attractive appearance; they are built in blocks, often occupying a minor street, formerly an alley, but widened and well paved. Each room is supplied with an abundance of light, and the flats are so constructed as to eliminate all the unpleasant features of the usual tenement houses. The average rental of these houses is $3.25 per month per room, which brings them within the rule that a laborer should pay not more than one-fifth of his income for rental. An admirable device for securing the cooperation of tenants in the care of the apartments is the provision for devoting one month's rent to repairs, and making a rebate to the tenant of this month's rent if no repairs are necessary; otherwise a rebate is made of the difference between the month's rent and the cost of repairs. Nearly 2,000 such houses have been built in Washington. The original company now has $940,000 invested in 289 of these houses, containing 578 apartments; they have paid annually dividends of 5 per cent., besides a surplus of over 20 per cent. of the original capital, which is included in the total investment. It is an evidence of the advantage of hygienic homes for the working classes, and a sufficient justification and reward for this sort of philanthropy, entirely aside from the financial feature, that the death-rate among the tenants of these houses is considerably below the general mortality rates of the city. This is practical philanthropy which is worthy of serious consideration and general imitation.

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Medical News

ARKANSAS

Death of Mrs. Sarah Collings.—The death of Mrs. Sarah Collings, the esteemed wife of Dr. Samuel P. Collings, Hot Springs, is reported. Mrs. Collings has been ill for several months, and her death is a severe shock and a distinct loss to the community, and the cause of deep grief to her many friends in Hot Springs and elsewhere.

Personal.—Dr. Fred Roberts, Lake City, has been elected president; Dr. Rufus W. Ratliff, Jonesboro, vice-president, and Dr. Charles M. Lutterloh, Jonesboro, secretary-treasurer, of the Craighead County Board of Health.——Dr. John P. Brown, Rogers, who has been seriously ill, is reported to be improving.——Dr. S. F. Walker, Texarkana, has been notified by the attorney general that he is entitled to his license to practice, having complied with the provisions of the act of 1903. ——Dr. Charles H. Cargile, Bentonville, was thrown from his buggy in a runaway a mile north of Rodgers, November 5, fracturing his leg.——Dr. John C. Hughes, Walnut Ridge, after a short trial, was exonerated from all blame in the killing of Alf. and I. K. Bagley, father and son, the killing being the termination of a feud.——Dr. Arthur G. Thompson has been elected president of the Pine Bluff Board of Health.

ILLINOIS

Fire in Tent Colony.—Fire at the Bartonville State Hospital, November 29, imperiled the fifty-six tuberculosis patients in that institution, but by energetic work on the part of the fire department of the asylum all were removed without casualty.

Chiropractor Fined.—Walter B. Vogel, a chiropractor of Mount Carroll, charged with *practicing* medicine without a license, is said to have been found guilty, November 23, and fined $200. The defendant gave bonds and says he will appeal the case.

Personal.—Dr. George S. Chalmers, Galesburg, who has been ill, is reported to be improving.——Dr. Fred H. Langhorst, Elgin, has returned from abroad and resumed the practice of his specialty.——Dr. St. Elmo M. Sala, Rock Island, has been elected president of the Rock Island County Society for the Prevention of Tuberculosis.——Dr. Arthur E. Lord, Plano, has returned from abroad.——Dr. Karl F. Snyder, Freeport, has entirely recovered from the accident sustained about two months ago and has resumed practice.——Drs. Joseph De Silva and Albert N. Mueller have been appointed members of the board of directors of the Rock Island Public Tuberculosis Sanatorium.

Chicago

Personal.—Dr. William E. Morgan, who was operated on for appendicitis at Mercy Hospital recently, is reported to be well on the road to recovery.——Dr. Julia Holmes Smith is reported to be seriously ill at her home.

Additional Tuberculosis Nurses.—The directors of the Municipal Tuberculosis Sanatorium have added nine additional nurses to the dispensary department of the institution, bringing the total number of nurses now employed up to twenty-six.

Increase of Diphtheria and Typhoid Fever.—On account of the amount of diphtheria and typhoid fever in Chicago and the steady increase of the number of cases, the department of health has asked and received a special appropriation of $10,000 to be used in fighting the threatened epidemics of these two diseases.

Location for City Sanatorium Fixed.—The city of Chicago is said to have agreed on an eighty-five acre tract of land bounded by Foster, California, Olive, Western, Bryn Mawr Avenues and Rockwell Street, as the location for the new municipal tuberculosis sanatorium. The land is relatively high, being from 18 to 40 feet above the city datum, and is owned by Mrs. Julia F. Porter, who offers it to the city for $100,000.

INDIANA

Pure Drug Organization.—The Indiana Physicians' Pure Drug Association has recently been formed with the object of supporting the state and national pure drug organizations, with the following officers: president, Dr. Edmund D. Clark, president of the Indianapolis Board of Health; vice-presidents, Drs. Frederic C. Heath, Frank M. Morrison, Thomas C. Kennedy and I. H. Roberts, and secretary-treasurer, Dr. Charles E. Cottingham.

Personal.—Dr. Ora L. McCay has returned after a year's absence and resumed practice at Romney.——Dr. Oliver L. Rea, Culver, has moved to Rochester.——Dr. Halsted Murat, Indianapolis, has been appointed assistant physician at the Indiana Reformatory, Jeffersonville, vice Dr. Edward L. Swadener, resigned to enter the government Indian service. ——Dr. Thomas J. O'Neil, Anderson, has been seriously ill with septicemia due to an infected wound of the hand.——Drs. Ralph S. Chappell and M. Cortez Leeth, Indianapolis, have been appointed deputy coroners of Marion County.——Dr. William P. Lane has been elected president, and Dr. I. S. Milstone, secretary of the board of health of Gary.——Dr. Clarence L. Bell, Hartford City, is said to have been declared insane by a medical board recently.——Dr. John W. Snyder, Michigan City, has succeeded the late Dr. J. Lucius Gray, Laporte, as health officer of Laporte County.——Dr. Chester B. Crumpacker, South Bend, has been reelected physician of St. Joseph County.——Dr. Franklin C. Cregor, Greenfield, while making a professional call at the county jail, suffered the loss of a finger by the sudden closing of a heavy door.——Dr. James A. Rawley has leased a two-story house in Brazil, which he is equipping as a hospital.

IOWA

Fire in Tuberculosis Camp.—A fire in the attic of the administration building of the Tuberculosis Camp, Des Moines, November 11, almost destroyed the building with a loss of about $1,000.

Personal.—Dr. Aaron A. Noyes, Mason City, who is still in active practice, celebrated his 88th birthday, November 26. ——Dr. Nic. Gay O. Coad, Hull, and wife have started for the Isle of Pines to spend the winter.——Dr. Walter H. Grimwood, Fort Madison, was operated on November 23, for the removal of gall-stones.——Dr. P. F. Lange has been added to the staff physicians of the Iowa Institution for the Feeble-Minded, Glenwood.——Dr. S. Oliver Stockslager, Boone, is reported to be seriously ill.——Drs. Ray R. Harris and Mathias D. Linehan, Dubuque, have been appointed surgeons of the Burlington System between Dubuque, Lacrosse and Galena.

KANSAS

Tuberculosis Notes.—At a recent meeting of the Kansas Association for the Prevention of Tuberculosis in Topeka, it was decided that the association hire a visiting nurse to travel through the state instructing tuberculosis patients regarding the proper care of themselves and the protection of their families.——At the meeting of the commissioners of Shawnee County, held in Topeka, November 7, it was decided to appropriate $135 a month for the months from October to January, inclusive, for the benefit of the Antituberculosis Camp.

Personal.—Dr. Sarah A. Noble, Clearwater, has located in Chicago.——Dr. M. A. Barber, professor of bacteriology at the University of Kansas, Lawrence, will, it is reported, go to the Philippine Islands at the close of the present school term to spend two years in medical research.——Considerable damage was done by fire to the office of Dr. Simon Steelsmith, Abilene, October 25.——By the will of the late Mrs. Samuel Adams, Powhattan, $25,000 has been devised to Dr. Ralph L. Funk, Powhattan, family physician of the deceased, who was also appointed as executor.

KENTUCKY

Personal.—Dr. Frederick D. Cartwright has been appointed pension examining surgeon at Bowling Green.——Dr. M. L. S. Butner, Shelbyville, was operated on November 23, at Norton Memorial Infirmary, Louisville.——Dr. Bowers, Newport, has been elected a member of the board of health, vice Dr. John Todd, resigned, to accept the position of health officer.

Hospital May Occupy Medical Building.—The Board of Public Safety and Hospital Commission of Louisville are considering the advisability of using the building formerly occupied by the Kentucky School of Medicine as the temporary location of the City Hospital, pending the erection of new buildings. The building in question contains at present about fifty beds.

Jefferson County Institutions.—The grand jury, in its November report, criticizes the condition of the Home for the Aged and Infirm in not having separate quarters for the white and colored inmates; for the uncleanly condition of the bread storeroom, and for an inadequate sewerage system.——The county poor farm was found antiquated, the laundry methods were declared crude and uncomfortable, the cottages housing the inmates old and the heating system was said to be dangerous.——Comment is made on the fact that the excellent hospital department at the Kentucky Institute for the Blind has had no inmate for two years.

Cannot Recover from Medical College.—The Court of Appeals has reversed the decision of the Jefferson County Circuit Court, in which Dr. Harry A. Davidson sued to annul the contract and payment of notes for $3,000 which he gave in consideration of being appointed to the chair of diseases of women in the Hospital College of Medicine before that institution was merged with the Louisville Medical College. The court decided that Dr. Davidson had acquiesced in the merger, and had accepted an appointment in the new institution as professor, and was therefore barred from now making any complaint that the merger terminated the contract. By this decision Dr. Davidson must pay the residue of the notes which he gave for the purchase of the professorship.

MARYLAND

Personal.—The State Board of Health has appointed Dr. Frederick V. Beitler, Halethorp, chief of the Bureau of Vital Statistics, vice Dr. William F. Hines, Baltimore, deceased.——On the occasion of the resignation of Dr. Robert P. Winterode, pathologist at Spring Grove Asylum for the Insane, near Catonsville, he was presented by the nurses and attendants with a handsome meerschaum pipe.

Baltimore

College Suspended.—It is reported that Atlantic Medical College, formerly the Southern Homeopathic Medical College, has been suspended owing to lack of financial support.

Tags for Physicians' Carriages.—The city has issued new tags for the carriages and automobiles of physicians, which instead of the red cross now bear a blue cross on a white field.

New Home for Crippled Children.—Dr. R. Tunstall Taylor, director and chief surgeon of the Hospital for the Relief of Crippled and Deformed Children, Baltimore, announces that James Lawrence Kerman, a wealthy hotel and theatrical man of Baltimore, has purchased for the hospital a new location, known as Radnor Park, in the suburbs of the city. In its new quarters the institution will be known as the James Lawrence Kernan Hospital for the Relief of Crippled and Deformed Children. The property is beautifully located, and the large colonial mansion and other buildings will be utilized for hospital purposes, while other buildings will be erected as necessary. Mr. Kernan has also provided a magnificent permanent endowment for the institution. The present institution will be continued as a reception and emergency hospital.

MASSACHUSETTS

Medical Club Meets.—Brookline Medical Club, at its recent meeting, elected Dr. George W. Kaan, president; Dr. Robert W. Hastings, vice-president, and Dr. H. Hale Powers, secretary-treasurer.

Woman's Medical Society Meeting.—The regular meeting of the Woman's State Medical Society of Massachusetts was held in Boston, November 8. A review of the work of the society of the last year was given. Dr. M. Marie Knudson, sanitary inspector of the Food Department of the Woman's Educational and Industrial Union, presented her report, and Dr. Eliza J. Dadmun, the president, gave an illustrated address on Oberammergau and the Passion Play.

What Is Being Done for Tuberculosis.—The New Bedford Antituberculosis Society moved its twenty-three patients from the old sanatorium building to the new infirmary near Sassaquin, November 29.——The special commission created by the last legislature to investigate and report on a system of caring for tuberculosis patients by state and local authorities recommends that from 5,000 to 6,000 additional beds be provided for such patients, that $5 a week be paid by the state for each non-paying tuberculosis patient in the local hospital, and that a system be established whereby tuberculosis patients may be supplied with food at their homes. The commission finds that there are now about 35,000 cases of tuberculosis in the state, and that for the accommodation of these patients there are at present 2,773 beds in hospitals and sanatoriums.——Fall River has permitted the use of its contagious disease hospital for tuberculosis patients, and fifty have been removed to the institution from the shacks on the Highlands.——Dr. Ralph B. Ober has been elected president of the Springfield Antituberculosis Association, vice Dr. Herbert C. Emerson.

MICHIGAN

The Small-Pox Situation.—The general quarantine against Saginaw was raised December 1, by proclamation of the mayor and on statement of the actual conditions. On October 17 and 18, forty-five cases of small-pox were reported in different parts of the city, and by November 7, 102 cases of small-pox had been reported with twenty-six deaths. Nearly all of the forty-five cases first reported were of the confluent type, and almost all the deaths were among patients of this class. General vaccination has practically stamped out the epidemic, and the expectation is that few more cases or deaths will occur.

MINNESOTA

County Society Meeting.—Mower County Medical Society, at its annual meeting in Austin recently, elected Dr. Charles F. Lewis, president; Dr. G. M. Frank Rogers, vice-president; Dr. Clifford C. Leck, secretary, all of Austin; and Dr. George J. Scottler, Dexter, treasurer.

Plan Sanitarium for Nervous Diseases.—Drs. Arthur Sweeney and Haldor Sneve, St. Paul, and William A. Jones, Minneapolis, have asked authority from the St. Paul City Council to erect a sanitarium in St. Paul, to cost $100,000, for the treatment of nervous diseases.

Unvaccinated Students Excluded from Classes.—By order of President Northrup of the University of Minnesota, about 350 students who had failed to comply with the law that all students should be vaccinated within three days after exposure to small-pox or be excluded from recitations for three weeks, have been excluded from classes.

Home for Crippled Children.—The new Home for Crippled and Deformed Children, adjoining Lake Phalen, St. Paul, is completed, and the installation of the equipment is all that remains to be done before the 100 children, who are now being accommodated in the City Hospital, can be transferred. It is expected that the institution will be fully equipped and ready for occupancy January 1.

Model Isolation Hospital.—Dr. Henry M. Bracken, secretary of the State Board of Health, has been instructed to have plans drawn for an isolation hospital in which to care for persons afflicted with epidemic diseases. This plan is to be kept in the office of the Board of Health and is to be used as a standard for all cities and counties in Minnesota which desire to erect such a building.

Personal.—Dr. Thomas G. Lee, Minneapolis, has returned from Europe.——Dr. Ignatius J. Murphy, Minneapolis, has been appointed inspector of the health department and assistant to Health Commissioner Henry E. Webster.——Dr. Joseph Nicholson, Brainerd, has recovered his health and resumed the management of the Northwestern Hospital.——Dr. Joseph D. Budd, Two Harbors, has been elected president of the Lake County Antituberculosis Society.

MISSOURI

Cocain Peddlers Fined.—Six men, convicted of peddling cocain in Kansas City, were fined sums aggregating $700, November 14. One of the individuals, said to be the executive head of the outlaw cocain business, was fined $200.

New Buildings and Betterments Needed for State Hospital.—New buildings to cost $35,000 are needed at State Hospital No. 2, St. Joseph, and requisitions for betterments and repairs to the old buildings amounting to $50,000 have also been made by the board of managers.

Tag Day in Kansas City.—The Kansas City Hospital Day Association realized $8,430.77 as the proceeds of its third annual tag day, November 19. This money will be divided among the German, Swedish, St. Luke's, St. Mary's, Baptist, Kansas City Post-Graduate and St. Anthony's hospitals, the Florence Crittenden Home and the Visiting Nurses' Association.

Society Meetings.—The seventy-first semiannual meeting of the Rolla District Medical Society was held in Rolla, November 18, and the following officers were elected: president, Dr. Charles F. Briegleb, St. Clair; vice-president, Dr. Samuel B. Rowe, Rolla, and secretary-treasurer, Dr. William H. Breuer, St. James. The next meeting will be held in St. James in May.——The Linton District Medical Society met in Mexico, November 16, and elected the following officers: president, Dr. Frank G. Nifong, Columbia; vice-presidents, Drs. Arthur R. McComas, Sturgeon, and Robert C. Strode, Mexico; secretary, Dr. R. T. Gibbs, Mexico; and treasurer, Dr. Ned R. Rodes, Mexico.——St. Charles County Medical Society, at its annual meeting, November 16, elected the following officers: president, Dr. Samuel R. Johnson; vice-president, Dr. Benedict P. Wentker; secretary, Dr. Thomas L. Hardin; treasurer, Dr. Carl H. Bitter; and censor, Dr. Frank J. Tainter, all of St. Charles.

NEBRASKA

Colored Physician Not Guilty.—Dr. C. A. Flippin, Grand Island, charged with performing a criminal operation which resulted in the death of Julia Kath at Stromsburg, has been acquitted.

Insurance Companies Lose Suit.—The accident insurance companies which had policies on the life of the late Dr. Frederick Rustin, Omaha, have been defeated in their suits to recover the $31,000 insurance involved in the case.

District Society Organized.—Physicians of Chase, Hayes, Dundy and Hitchcock counties met in Wauneta recently, and organized a medical association and elected Dr. Anderw B. Fellers, Palisade, president; Dr. C. E. Stewart, Imperial, vice-president, and Dr. Albert J. Boren, Palisade, secretary-treasurer.

Personal.—Dr. Walter O. Henry has resigned the chair of gynecology in Creighton Medical College, Omaha.——Dr. Louis L. Henninger has located in Omaha as a specialist in diseases of the eye, ear, nose and throat.——Dr. Oscar H. Hahn, Home, Kan., has been appointed medical superintendent of the Nebraska Sanitarium, Hastings.

NEW JERSEY

Hospital Site Abandoned.—Because of the many protests made, the Morris County Antituberculosis Society has abandoned the site in Morris Plains for its sanatorium for tuberculosis.

Personal.—Dr. William D. Miningham, Newark, has started on a trip around the world.——Dr. Frank R. Sheppard, of Millville, made a misstep in the dark, December 1, and fell down a flight of steps, sustaining a fracture of the ankle.——Dr. Herbert Willis, Beach Haven, has been appointed medical examiner of public schools of Tuckerton.

Ice Cream Inspection.—At the meeting of the National Association of Ice Cream Manufacturers held at Atlantic City during the past week, it was announced that out of fifty-one ice cream factories in the state, only fifteen were found that met with the requirements of the law. As a total of 3,000,000 quarts were manufactured in these fifty-one factories during the year, the necessity for laws requiring proper sanitation and greater cleanliness was emphasized.

Children's Seashore House Always Open.—The improvement in chronic cases sent to the Children's Seashore House, Annapolis and Atlantic Avenues, Atlantic City, N. J., chiefly from the hospitals of Philadelphia, in January, 1910, has inspired the management to keep it open the year round. Tuberculous cases are given preference, both in admission and length of stay, but convalescents from acute diseases and other children likely to be benefited by a short stay at the seashore will also be received as there may be room. Cases of pulmonary tuberculosis are not received. Only children between 4 and 12 years of age can be admitted in the winter. Those able to pay are charged $2 a week or less, but no child will be refused admission because of inability to pay. The services of a teacher have been provided for the instruction of such of the chronic invalids as are in a condition to be taught. Those who are able, go to a large sunny school room right on the beach, while those confined to bed are taught in the wards or on the porches.

NEW YORK

Physical Test for Marriage.—A bill drawn by Mrs. Harriet Johnston-Wood and endorsed by the City Federation of Woman's Clubs, is to be introduced into the legislature this session, which provides that all applicants for marriage license shall be obliged to present a clean bill of health.

To Fight Infantile Paralysis.—A request will be made to the new legislature for a special appropriation to permit the State Health Department to make a thorough investigation of the causes and the steps to be taken for the prevention of infantile paralysis. The proposition has the endorsement of the health officers of the state.

Another Typhoid Carrier.—A man who is known as "Typhoid John" is giving the State Health Department and the New York Milk Committee some concern. Last summer there were thirty cases of typhoid in an Adirondack camp. The water and milk supplies were above suspicion. The last person to handle the milk was an Adirondack guide, and he was found to be a typhoid carrier. The man is willing to be treated, which is fortunate, since there is no state law under which he could be detained had he objected.

An Important Court Decision.—Holding that municipalities have no right to pollute public water-courses through their sewage systems the Supreme Court has granted an injunction restraining the village of Sharon Springs from polluting the waters of Brimstone Creek, the waters of which are used by property owners along its course for dairy purposes. The defense of the village was that the state had approved the plans of its sewage system. This was a test case, there being fifty similar suits pending. The court held that it was the policy of the state that water-courses be maintained in a pure and wholesome condition, and that in granting aid to municipal corporations to install sewer systems, the right to maintain a public nuisance was not conferred.

New York City

Flexner Operated On.—Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, who was operated on for appendicitis at the Presbyterian Hospital, December 4, is reported to be doing well.

Fined for Selling Prayers.—Mrs. Eva Stein has paid a fine of $500 in Special Sessions for violating the medical law. She told the agent of the New York Medical Society that the latter had rheumatism and that she would guarantee a cure. She wrote prayers which were to be repeated, and sold them for 15 cents each.

Easy to Buy Red Cross Seals.—The Committee on the Prevention of Tuberculosis of the Charity Organization Society reports through its sales manager that more than 1,800 agencies for the sale of the Red Cross Christmas seals have been opened in Manhattan and the Bronx. They are on sale at every ticket booth of the Hudson tunnel system; all the news stands of the elevated roads also sell the seals. Gifts of advertising space have been made by many of the newspapers and also space in the street cars and in the windows of many stores.

A Good Summer for Babies.—The statistics from St. John's Guild, which operates the Sea Side Hospital, New Dorp, S. I., show that during the past summer the Guild cared for 2,400 mothers and children, 296 less than during the previous season. The number of hospital days of treatment was 20 per cent. less than during the summer of 1909. There were only thirty-eight deaths compared with fifty-one for the summer of 1909. It has been recommended that this hospital, which lies idle during eight months of the year, be used as a convalescent home for infants and their mothers.

The Conference on the Milk Problem.—The conference held under the auspices of the New York Milk Committee at the United Charities Building, passed resolutions advising the investigation of milk production, transportation and distribution, labeling, pasteurization and cooking of milk, and recommending to the city health authorities that special milk for 500,000 infants and children under 5 years of age be immediately obtained. The president of the Board of Aldermen spoke of the city's appropriation of $10,000 to investigate methods of furnishing pure milk. Julius Mildenhawer, assistant in the New York State Agricultural Department, stated that the milk supply was better and safer to-day than ever before. Prof. William T. Sedgewick of the Massachusetts Institute of Technology, was of the opinion that cooked milk, though not so palatable, was by far the safest.

NORTH DAKOTA

Society Meetings.—The Grand Forks Medical Club, at its annual meeting November 4, elected the following officers: president, Peter Nestos; vice-presidents, Herbert Movius and Joseph Martineau, and secretary-treasurer, Fred DuBois.——The Grand Forks Public Health League, at its annual meeting, elected the following officers: president, Dr. Gustave F. Ruediger; honorary vice-presidents, President McVea of the University and Dr. George M. Williamson; and vice-president, Dr. Anders A. Westeen.

Personal.—Dr. John C. Smith, Thompson, has been appointed physician for District No. 3, Grand Forks County, to fill the unexpired term of Dr. Frederick V. Lyman, Thompson.——Dr. William C. Eichler, Underwood, suffered a loss of $500 by fire in his office, November 10.——Dr. and Mrs. Martin W. Roan, Bismarck, have returned from Europe.——Dr. John D. Taylor, Grand Forks, has started for Europe.——The branch station of the North Dakota Public Health Laboratory is to be established at Bismarck under the charge of Dr. Carl T. Raven, formerly city bacteriologist of Oklahoma City.

OHIO

Sanatorium Cottages Opened.—Eight new cottages are now practically completed at the State Sanatorium, Mount Vernon, which will increase the capacity of the institution to more than 200.

Fail to Report Births.—Health Superintendent Ford of Cleveland declares that of 1,400 deaths of infants reported during the last two years not one birth certificate has been filed.

He believes many women are practicing midwifery in the city without license.

Faculty Changes.—Dr. Lyman A. Brewer, associate professor of surgery in Toledo Medical College, has been elected dean of the college, vice Dr. James Donnelly, deceased.——Dr. Perry C. Pike of the University of Pennsylvania has been made professor of physiology in Toledo Medical College.

Alumni Meeting.—The third annual meeting and banquet of the Starling-Ohio Medical Alumni Association of the Miami Valley was held in Dayton, November 22, and the following officers elected: president, Dr. Francis C. Gray, Dayton; vice-president, Dr. Elwood E. Bevington, New Paris; secretary, Dr. G. W. Riche, D.D.S., Dayton; treasurer, Dr. S. Edwards Hendren Dayton, and trustee, H. L. Oliver, D.D.S., Dayton.

Personal.—Dr. Adam L. Jackson, Zanesville, is said to have suffered a cerebral hemorrhage, November 19, and to be in a critical condition.——Dr. Richard A. Bolt, Cleveland, has been appointed medical director of the College of Young China near Pekin. He will teach anatomy, physiology and hygiene.——Dr. William H. Harper, Columbus, received injuries about the legs in a collision between his automobile, a bakery wagon and a street car, November 21.——Dr. George S. Weger, Delphos, is said to have retired from practice to become secretary-treasurer and general manager of the Mueller Implement and Auto Company of that city.——Dr. William F. Teegarden, Columbus, charged with selling liquor in a prohibition district, is said to have pleaded guilty at Marysville, November 12, and to have been fined $75 and costs.

PENNSYLVANIA

Anniversary of Academy.—The Harrisburg Academy of Medicine celebrated its fifteenth anniversary, November 25. Dr. Judson Daland, Philadelphia, delivered an address. Dr. William J. Middleton, Steelton, president, was in the chair, and after the ceremonies, a banquet was served at the Commonwealth Hotel.

Norristown Asylum Report.—The annual report of the Norristown Hospital for the Insane, claims for this year the largest percentage of patients restored since its foundation. Since it was founded, 30 years ago, there have been 13,715 patients treated at the institution. Of these 2,911 have been discharged as restored, 1,991 have improved, 922 are unimproved, 38 were decided not insane and 4,943 died.

Personal.—Dr. Cornelius C. Wholey has been appointed a member of the staff of the St. Francis Hospital, Pittsburg, in charge of the inebriate department.——Dr. Cyril H. Haas, Selinsgrove, is going as medical missionary to Turkey.——Dr. C. Montgomery, resident physician at the Punxsutawney Hospital, was attacked by an insane patient and was saved from severe injury or death only by the timely arrival of assistance.

Medical Club Organized.—The physicians of Armstrong, Butler, Clarion and Venango Counties have formed an organization known as the Foxburg Medical Club, which meets in that city weekly. The object of the organization is the study of medicine in its various phases. At each session, after the scientific papers and discussions are finished, a social hour is spent at lunch at the Foxburg Inn, at which, by common consent, medical subjects are tabooed.

County Societies Elect.—At the annual meeting of the Bucks County Medical Society, in Doylestown, November 9, the following officers were elected: president, Dr. William Martin, Bristol; vice-presidents, Drs. Frank B. Swartzlander, Doylestown, and Harry L. Thomas, Langhorne; secretary-treasurer and reporter, Dr. Anthony F. Myers, Blooming Glen, and censors, Drs. George M. Grim, Ottsville, William R. Cooper, Point Pleasant, and Walter H. Brown, Richlandtown.——A public meeting of the Greene County Medical Society was held in Waynesburg, October 25, when the following officers were elected for the coming year: president, Dr. Thomas L. Blair, Waynesburg; vice-president, Dr. B. L. Cowan; and secretary, Dr. Thomas B. Hill, Waynesburg.

Philadelphia

DaCosta Dead.—As we go to press the notice of the death of Dr. John C. DaCosta, on December 6, is received.

Bottlers Plead Guilty.—Pleading guilty to charges of adulterating their bottled drinks with saccharin, preferred against them by Harry P. Cassidy, special agent of the State Dairy and Food Commission, ten bottlers were fined $25 and costs, November 29.

Measles on Steamship.—The North German Lloyd steamship *Cassel*, from Bremen, which docked November 30, carried more than 1,500 cabin and steerage passengers. A baby died at sea of measles and sixteen other children in the steerage were found to have the same disease and were all sent to the Philadelphia Hospital.

Donation and Bequest.—A donation of $5,000 to the endowment fund of St. Timothy's Hospital has been made by Mrs. Elisabeth L. Clark, in memory of her son, Robert C. Clark. The hospital board will erect a bronze tablet marking the Robert C. Clark bed in perpetuity.——The will of the late Robert O'Donnell bequeaths to St. John's Orphan Asylum and the Little Sisters of the Poor, $1,000 each; to St. Vincent's Home for Infants, St. Vincent's Maternity Hospital, and the Home of the Good Shepherd, $500 each.

Medical Portraits for the University.—Julian Story, the artist, is painting a portrait of Dr. Samuel G. Dixon, State Health Commissioner, which will be hung in the laboratory of pathology at the University of Pennsylvania. The university is also having painted, by Hugh Henry Breckenbridge, a portrait of Dr. James Tyson, recently elected emeritus professor of medicine. A portrait of Dr. Louis Starr, who from 1884 to 1890 was clinical professor of children's diseases, is being painted by Joseph de Camp, and Dr. Simon Flexner, of the Rockefeller Institute, who was professor of pathology from 1899 to 1904, is also sitting for a portrait.

Increased Health Budget.—The Council's Committee on Health and Charities has approved the budget of the department of Health and Charities for 1911, in which Dr. Joseph S. Neff asks an appropriation of $7,127,562 as compared with an appropriation for the current year of $1,016,393. The budget includes an item of $5,000,000 for hospital buildings for the insane on the 800 acres of city land at Byeberry; an item of $100,000 for the Home for the Feeble-Minded; $150,000 for new boilers, dynamos and buildings at the General Hospital; $35,000 for additional fireproof bridges at the Philadelphia General Hospital, and $15,000 for a tuberculosis sanatorium at Byeberry.

Personal.—Dr. Howard S. Anders has been elected fellow of the Royal Meteorological society of London, on account of a series of investigations relating to weather phenomena and influenza epidemics, published since 1898 in the Transactions of the Ame [illegible] Association.——Dr. Claude A. Dundore is [illegible] in Colorado.——Dr. Benjamin A. Thomas has been elected professor of genito-urinary surgery in the Polyclinic Hospital.——Dr. Thomas S. Githens has been appointed to a fellowship in the pharmacologic department of the Rockefeller Institute for Medical Research.——Dr. Louis Mutschler, assistant surgeon in the Episcopal Hospital for ten years, has been elected surgeon.

SOUTH DAKOTA

Personal.—Dr. Charles M. Hollister has been appointed surgeon for the Chicago Northwestern Railroad at Pierre, vice Dr. De Lorme W. Robinson, deceased.——Dr. Frank H. Creamer has been appointed local surgeon of the Milwaukee System at Dupree.

New County Society Meeting.—The Gregory County Medical Society was recently organized at Dallas, and the following officers were elected: president, Dr. Harry A. Murnan, Gregory; vice-president, Dr. Edwin B. Bradley, Burke; and secretary-treasurer, Dr. Thomas R. Castles, Dallas.

State Society Meeting.—The South Dakota State Medical Association held its twenty-ninth annual meeting in Hot Springs, September 27-29. Dr. Hans M. Finnerud, Watertown, was elected president; Dr. Charles E. McCauley, Aberdeen, vice-president; and Dr. Robert D. Alway, Aberdeen, secretary-treasurer. The next meeting will be held in Pierre in June, 1911.

District Society Meets.—The physicians of Pennington, Custer, Fall River and Stanley counties have organized a district society, to be known as the Hot Springs District Medical Society No. 10, and have elected the following officers: president, Dr. Frederick E. Walker, Hot Springs; vice-president, Dr. Frederick W. Minty, Rapid City; and secretary-treasurer, Dr. William E. Robinson, Rapid City.

Black Hills Physicians Hold Meeting.—At the annual meeting of the Black Hills Medical Association, held in Deadwood, November 17, the following officers were elected: president, Dr. Frank S. Howe, Deadwood; vice-president, Dr. Arthur S. Hoon, Nemo; secretary, Dr. Walter L. Vercoe, Lead; treasurer, Dr. Francis E. Clough, Lead; delegates to the state society meeting, Drs. John W. Freeman, Lead, and Frederick A. Brandt, Sturgis; and censors, Drs. John R. Nilsson, Lead: Charles Richards, Sturgis, and Herman F. Ratte, Rapid City.

VIRGINIA

Personal.—Capt. Lyle F. Hansbrough, Front Royal, has resigned from the Medical Corps, Virginia Volunteers.——Dr. Robert C. Randolph, Boyce, is reported to be seriously ill with typhoid fever in Winchester Memorial Hospital.——Dr. Lewis B. Firey, Norfolk, was attacked in his office by two men, November 21, bound hand and foot to a chair, and robbed of $24.

Advocates Hospital for Inebriates.—In the annual report of Dr. John C. King, superintendent of the Southwestern State Hospital for the Insane, Marion, he advocates a separate institution for the care and treatment of individuals addicted to the liquor or drug habit.——Four new buildings have been completed at the State Sanatorium, Catawba, near Salem, which will increase the capacity of the institution to 118.——The new Municipal Tuberculosis Hospital Camp in Henrico County, near Richmond, narrowly escaped destruction by a field fire, November 24.

Medical Society Meetings.—The annual meeting of the Petersburg Medical Faculty was held November 17, and the following officers were elected: president, Dr. W. Preston Hoy; vice-presidents, Drs. Julian R. Beckwith and Robert A. Gamble; corresponding secretary, Dr. Hampden A. Burke, and secretary-treasurer, Dr. William C. Powell.——Rockingham County Medical Society has elected Dr. John F. Wright, Keezletown, president; Dr. Ashby C. Byers, Lacey Spring, vice-president, and Dr. John M. Biedler, Harrisonburg, secretary-treasurer.

GENERAL NEWS

International Dermatologic Congress.—The seventh international congress for dermatology and syphiligraphy will meet at Rome, Sep. 25 to 29, 1911. The questions appointed for discussion are the treatment of syphilis, physiotherapy in treatment of skin diseases, and blastomycosis and sporotrichosis and their relations with analogous affections.

International Prize for Work in Obstetrics and Gynecology.—The surplus left from the international congresses for gynecology and obstetrics in 1892 and 1895 amounts now to about $6,000, and at the fifth congress, recently held in Russia, it was decided to devote most of the income to an international prize for some important achievement or work in the line of obstetrics or gynecology, to be awarded at future congresses. The next congress is to be held in Berlin in 1912. Eclampsia is the chief topic appointed for discussion.

International Hygiene Exposition.—The Germans are making every effort to render the Hygiene Exhibition at Dresden in 1911 an epoch-making educational force, concentrating the results of advanced hygiene and sanitation as achieved in the various countries of the world into a grand object-lesson for comparison and the triumph of the fittest. The exhibition, to which several references have been made in The Journal, includes the five sections, the Scientific, the Historical, the Popular, the Section of Sports and, inseparably connected with them all, Industrial Conditions. The Popular Section is devoted to the whole province of the hygiene of the individual, how to maintain health and strength and improve it under all conditions, and how to rouse the people to a consciousness of the significance and importance of legislative measures enacted in the interests of health protection. The various countries are taking a practical interest in the exhibition, Russia having appropriated 102,000 roubles, over $50,000, and Japan having recently increased its appropriation from $125,000 to $165,000, and speaking for over 1,500 square yards of floor space. The third series of Olympian games is to be held in connection with the exhibition, July 8 and 9, concluding with a climbing trip through the mountainous district nearby. A number of national congresses dealing with matters more or less connected with hygiene are also to be held in connection with the exhibition, the dates of several French congresses of the kind being already announced; among them are the Société Française des Habitations à Bon Marché, several engineering and architect societies, women's clubs, labor unions, etc. Our British exchanges are lamenting that the British government referred to the Board of Trade the invitation to participate in this exposition, and the latter declined, as it had already three industrial expositions on its hands—Brussels, Turin and Rome—so that they say that Great Britain is the only great power which is not to be officially represented. The publicity bureau is issuing once or twice a month for free distribution a circular of "social-hygienic correspondence," which contains many interesting items and data. Address H. Pfeiffer, Zwickauerstrasse 35, Dresden, Germany. Further details of the exposition and its organization were given in The Journal, Oct. 1, 1910.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Nov. 18, 1910.

Professor Gaucher on Arsenobenzol ("606")

Professor Gaucher, who has succeeded Professor Fournier in the clinic of cutaneous and syphilitic diseases of the Paris medical college, has just devoted one of his clinical lessons to the treatment of syphilis by Ehrlich's method and, in the last session of the Académie de Médecine, he made a report on the same subject. From his personal observation he believes that arsenobenzol does not deserve the name of *therapia sterilisans magna* which Ehrlich has given it. The relapses and the appearance of new manifestations after the injection of this remedy have become innumerable. General paralysis, tabes, the visceral lesions and the quaternary or parasyphilitic lesions, such as lingual leukoplasia, are absolutely intractable to "606." Other forms of syphilis are cured as slowly with "606" as with mercury and potassium iodid. This is particularly the case for the ulcerated gummata. On the other hand, superficial ulcerations and erosive mucous plaques improve very rapidly under "606." Ulcerated and papulous mucous plaques improve much more slowly and sometimes are altogether intractable. Erosive or ulcerated chancres are very quickly cured, but papulous hypertrophic chancres of the skin are cured more slowly. Dry cutaneous lesions are commonly less quickly influenced than ulcerated lesions and often even resist treatment altogether. As for papulous and tubercular lesions, they are cured less rapidly by "606" than under the classical treatment. However, arsenobenzol sometimes gives remarkable results for the tubercular syphilides, as for gummata in cases in which mercury has failed. Gaucher believes that "606" is a remedy which has come to stay but to be used *only exceptionally*. In most cases, mercury treatment ought to be relied on and it ought always to be used first, arsenobenzol being employed only when the patient is intolerant of mercurial preparations or when the latter are ineffective or insufficient. Cases in which mercury is sufficient are very rare, so that there are few indications for the "606." Moreover, it is not a practical remedy. Gaucher has seen patients much weakened by injections; one lost 12 and another 14 kilos (26 and 30 pounds).

Contagiousness of Malta Fever

At the last session of the Académie de Médecine, Professor Widal reported a case of Malta fever which occurred in his own laboratory in an attendant who had taken care of cultures of *Micrococcus melitensis*. In laboratories where the agglutination reaction for Malta fever is often produced, cultures killed by formaldehyd vapor should be used. Moreover, since cases of Malta fever have multiplied in France in the last few years, goats' milk ought not to be used unboiled. The importation of goats from the island of Malta ought to be prohibited in French ports as it has already been in the ports of Tunis. On the motion of Dr. Widal, the academy passed a resolution that Malta fever ought to be included in the list of diseases compulsorily reportable.

Professor Grasset on the Medical Crisis

At the opening session of the University of Montpellier, Professor J. Grasset made an address in which he answered objections to the *concours d' agrégation*. He believes that the training of the clinician in Germany and in England is much inferior to that in France. In Grasset's opinion, the German privat-docent system is the *most* undemocratic imaginable. He declares that it is not the preservation or suppression of the *concours* that ought to cause disquietude; it is something more serious: the "phobia of inequality" with which the medical profession is imbued.

Plans for the Formation of a Medicolegal Institute

In one of my previous letters (The Journal, Jan. 15, 1910, p. 215) I noticed the plan for the reorganization of the morgue. The Minister of Public Instruction has just presented a bill for the foundation in Paris of a medicolegal institute, comprising all the administrative and educational services installed in the morgue building, which will make investigations to identify unknown bodies, perform judicial necropsies and give expert medicolegal opinions as well as instruction with laboratory and practical work in legal medicine. For instruction and scientific research, the institute will be connected with the Paris Medical college, which will have free disposition of unclaimed bodies left in the institute.

Abuse of the Red Cross Emblem

In *Caducée*, a journal of military medicine, Dr. Granjux has undertaken a campaign for the prohibition of the abuse of the

Red Cross emblem in France At the time of the revision of the Geneva Convention, in 1906 an article was voted requiring all the states which signed the convention to prevent the use of the emblem and even the name of the Red Cross or Geneva Cross by private individuals or by societies not entitled to it, and especially for commercial purposes as a trade mark A maximum period of five years was allowed the governments to put these measures into effect Some countries have already forbidden the abuse of the emblem, but in France one may still see used red crosses on the signs of pharmacists, on nurses' houses and on ambulances

Homage to Professor Bernheim

On the retirement of Dr H Bernheim, professor of clinical medicine at the Nancy medical college, his collaborators and friends presented him with an artistic medal Several addresses were given, especially by Dr Gross, dean of the Nancy medical college and by M C Adam, rector of the university Dr Bernheim gave an interesting review of his whole life, first in Strasburg before the war of 1870 71, then in the army ambulance service during that campaign and finally, since 1872 at Nancy, where he has been occupied since 1883 with the subject of suggestion, taking sides against the school of the Salpêtrière represented by Charcot

Measures Against Alcoholism

Taking the stand that the greater number of crimes committed are the direct result of alcoholism and that the latter constitutes a veritable social scourge which must be checked most energetically, the jury of the Seine in November passed the following resolution (1) that every individual found drunk on the public thoroughfare ought to be immediately arrested and brought before the courts, (2) that for ten years, all granting of licenses ought to be absolutely prohibited.

BERLIN LETTER

(*From Our Regular Correspondent*)

Berlin, Nov 10, 1910

Suicide Statistics

According to the statements made by Dr Schilling, the frequency of suicide in Europe has increased since 1831 by 400 per cent, while the growth of the population is only 60 per cent From 1869 to 1872 there were 72 suicides to 1,000,000 inhabitants in Prussia, while from 1891 to 1900 there were 60,518 In the German empire the number of suicides for 1881 was 9,944, for 1903, 12,730 Even the suicide of children has continually increased Only in a few countries, such as Norway, Denmark and Spain, has the number of suicides decreased In addition there is no doubt that, as a rule, the number of suicides is materially larger than the official figures, as cases of suicide are frequently concealed Among the methods, hanging is most frequently employed Of 100 suicides during the years 1883 to 1890, 57 3 to 62 hung themselves, 17 to 20 drowned themselves, 9 4 to 12 8 shot themselves, and in the fourth place come those who stab themselves and fifth, those who take poison More unmarried persons kill themselves than married, more single women than single men, more widowers than widows Among motives, love and jealousy predominate among the women, alcoholism furnishes many victims As to age a suicide under five is scarcely known and the rate constantly increases from five to twenty five and then falls off somewhat until the fiftieth year, and again increases during old age Suicide is scarcely influenced by climatic conditions, but the season of the year has an especial importance In summer the cases are most frequent and least so in December Also with reference to the time of day there are differences The largest number of suicides occurred between 6 and 12 a m and 2 to 6 p m With reference to profession and occupation, there were in Prussia from 1883 to 1890 for 100,000 inhabitants only 40 suicides among those in business for themselves, 61 among public officials, 63 among private officers, 40 among laborers and servants, 59 among persons in the army, 84 among those having incomes and pensions and 67 among the recipients of charity

Alcoholism and Mental Diseases

From his investigations in the insane asylum at Frankfort a M on the question to what extent alcohol is to be regarded as the cause of insanity, among a total of 2 032 who were received in 1907 08 with a history of alcoholic antecedents, Dr Sichel found drunkenness of the parents or near relatives in 308 cases The alcoholic taint was distributed as follows among the various forms of mental disease Chronic alcoholism 39 9 per cent, imbecility and idiocy, 16 4 per cent, dementia præcox, 14 3 per cent, depressive mania, 3 6 per cent, epilepsy, 15 2 per cent, hysteria, 7 5 per cent, traumatic psychoses, 0 6 per cent, paralysis and organic psychoses, 4 6 per cent, senile psychoses, 1 6 per cent, psychoses of other forms, 2 3 per cent, psychoses and alcoholism, 17 2 per cent The fact first recognized by Sioli that there is a homogeneous inheritance of particular forms of mental disease is also evident here, two fifths of the patients tainted by the drunkenness of their parents become drunkards, and alcohol plays a large rôle in the psychoses of another fifth The majority of the patients were received on account of alcoholic disturbances, especially delirium tremens Next in frequency come epilepsy and dementia præcox With reference to the other psychoses it should not be overlooked that in addition to alcoholism in many cases there were other forms of inherited taint

Those with alcoholic inheritance show in comparison with other insane a predominance in the first decade, the children of drunkards need institutional treatment earlier than others Among the 308 patients there were thirteen children of and under school age The maximum of admissions among those with alcoholic taint, as well as with other mental diseases, falls in the fourth decade The data with reference to the offspring of patients coming from families of drunkards are below the reality, as they represent a minimum obtained from the historical data The percentage of sterile marriages is strikingly large Among 130 married patients 22 marriages were without offspring (not even stillbirths or miscarriages), of 10 marriages nothing could be learned From the remaining 98 marriages there were 205 children who might be designated as healthy, and 118 of whom no exact information could be obtained, 52 were not carried to full term, 20 were stillborn, 75 died soon after birth 21 of convulsions, 32 of infectious diseases Altogether 200 individuals perished at birth or soon after Among the survivors diseases of the nervous system appeared at an early date in a considerable percentage Here the figure obtained is surely below the truth Some were already in institutions, others had left home and were lost sight of The patients of the institution are drawn from all classes of the population but the group under consideration belongs in the great majority to the lower classes Among the victims of alcoholism the effort to raise their offspring above their own social level appears to be totally lacking, 61 per cent of the patients were paupers

On the relations of alcoholism to etiology of epilepsy, Dr M Muller has investigated the material of the Swiss institutions for epileptics The material of the Zurich institute for the years from 1896 to 1907 showed that among 503 patients admitted, a history of alcoholic taint was obtained in 369 cases These showed alcoholism in the progenitors in 33 99 per cent, psychoses and neuroses in 29 22 per cent, epilepsy in 10 13 per cent He remarks that collective statistics cannot lead us much further in the investigation of the conditions of heredity but that there is need of study of the individual family in order to gain a deeper insight into the matter He has the tabulated details for thirty families all of which show analogous conditions The number of inferior members is very large The appearance of affections of the nervous system and of other organs such as tuberculosis and carcinoma is frequent The parents of the patient show no abnormalities, but the grandparents and the collateral lines on the mother's side are characterized by abnormalities of all sorts The inferior germ plasma came into the family through the mother and this inferiority was occasioned by the alcoholism of the grandparents, in the mother it remained latent Epilepsy in these families is of a severe type and associated with physical inferiority Very often the only heredity in the direct line of the mother is alcoholic and the healthy germ plasma of the father is unable to neutralize this injurious influence The simultaneous occurrence of alcoholism or alcoholic taint on the paternal side is correspondingly graver As to the relations of individual alcoholism to epilepsy, Muller is of the opinion that an epilepsy generated by the use of alcoholic drinks in a healthy constitution does not exist but that the use of alcohol in a nursing woman may produce epileptic convulsions in the infant

Bill for a Law Against Quackery

The antiquackery bill which I mentioned some time ago has just passed the senate Whether it will meet the wishes of the medical profession and is suited to restrain the growth of quackery remains to be seen Also it is a question what position the Reichstag, the lower house whose consent is necessary for the enactment of the law, will take in reference to this bill

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Nov. 22, 1910.

A General Medical Tariff for Prague

The physicians of Prague have, after repeated efforts, succeeded in convincing all members of the local medical association of the necessity for a minimal tariff for professional services. In a memorandum addressed to the general public, the necessity of having a fixed tariff is explained by the frequent disputes between patients and doctors as to fees and by the increase of the general cost of living. The tariff divides the doctors into general practitioners, specialists and consultants. The last-named doctors are not bound to any fixed sum, but they may not go below the usual terms of specialists. The general practitioner must charge at least 2 kronen (40 cents) for a consultation in his office and 3 kronen (60 cents) for a visit in the patient's house. Night visits to be charged for at double rates of the day fee. Specialists have to charge double the rates of the ordinary doctor's fee. This is only the lower margin, as of course no upper limit can be fixed. All consultations by telephone, all written testimonials, all surgical dressings and appliances shall be charged for, the latter according to their actual cost, the former at the rate of 2 kronen each. The fee shall be due when the treatment or attendance on the patient ends. Accounts shall be sent in every quarter of the year; for fees due longer than a year, the doctor shall be entitled to ask interest at the rate of 5 per cent.

Mortality and Health of the Jewish Population in Vienna

A remarkable report by the Jewish board of health of Vienna has just now been published. It is interesting to compare its figures with those of the Gentile population. In 1909, there were 180,000 Jews among 2,100,000 of Viennese inhabitants, or a little less than 9 per cent. They have increased by 4 per cent. against 2 per cent. of the other part of the population, when the year 1908 is considered. There were 2,502 children born alive. The increase by births was 7.5 per cent. The percentage of childbirth at Vienna generally, is less than 1 per cent. The Jewish mortality was 125 per 1,000. The general Vienna mortality was 16 per cent. in 1909. A large number of deaths was due to senility: more than 20 per cent. of the deaths happened at ages over 75. It is interesting to note that only 185 Jewish infants under one year of age died in 1909, less than 9 per cent. of all deaths. Among the Jews, there is a marked freedom from alcoholism and its sequelæ; diabetes, obesity, leukemia and neurasthenia are very frequent complaints, according to hospital registers, while insanity is not more frequent than in the whole community. Taken all in all, the Jewish population in Vienna is an excellent example of the value of long-continued observations of hygienic principles; for as such, most of their religious rules regulating their living must be regarded. The special care paid by them to children, the absence of factory working by mothers, tends to propagate a healthy stock of people up to a high age.

Marriages

Bohumur J. Dvorsky, M.D., to Miss Rose M. Votipka, both of Chicago, November 24.

Frank Brouwer, M.D., to Mrs. Alida Kirk, both of Toms River, N. J., November 25.

Harrison S. Thurston, M.D., to Miss Ella C. Shannon, both of Indianapolis, November 23.

Walter O. Gray, M.D., Worland, Wyo., to Miss Mary Forbes of York, Neb., November 24.

James G. Marron, M.D., Brainard, Neb., to Mrs. Frances Barnforth of Omaha, November 17.

Joel D. Whitaker, M.D., Raleigh, N. C., to Miss Melissa Myers of Logansport, Ind., November 22.

David J. Hale, M.D., Las Cascadas, C. Z., to Miss Edith Dean of Mount Pleasant, Mich., recently.

Joseph C. R. Doggett, M.D., Crane, Mo., to Miss Erma Ethel Craig of Galena, Mo., November 20.

Joseph Lane Finley, M.D., Betterton, Md., to Mrs. Emma R. Baughman, at Baltimore, November 23.

Charles Henry McDonald, M.D., to Miss Vesta L. Vradenburg, both of Arthur, Ill., November 17.

Claude Smith Black, M.D., Warren, Ind., to Miss Hallye Nelson of Greencastle, Ind., November 16.

Albert L. Sibold, M.D., McDonald's Mill, Va., to Miss Addie V. Parks, at Baltimore, November 19.

Herman Theodore Bechtold, M.D., O'Falion, Ill., to Mrs. Elle Merch-Bechtold of Belleville, Ill., November 17.

Joseph W. Shaw, M.D., Buckville, Ark., to Mrs. Susie Johnson of Lena, Ark., at Hot Springs, November 21.

Guy Dawson Rutledge, M.D., Junction, Utah, to Miss Anna Mary Fletcher of Smithshire, Ill., October 20.

Russell Wesley Raynor, M.D., White Haven, Md., to Miss Lola E. Wilson, at Deal's Island, Md., November 20.

Leslie Erwin Coffin, M.D., Iron Mountain, Mich., to Miss Emily May Beeson of Marshalltown, Ia., October 27.

Howard Stanley Gorsuch, M.D., to Miss Clara Strauff, both of Baltimore, at Wilmington, Del., November 22.

Charles Waite Orville Bunker, M.D., U. S. Navy, to Miss Eleanor Garrett Caldwell, at New York City, November 12.

Deaths

Landon Brame Edwards, M.D. New York University, New York City, 1867; for many years secretary of the Medical Society of Virginia; one of the founders of the University College of Medicine; founder in 1874 and for many years editor of the *Virginia Medical Monthly*, later known as the *Virginia Medical Semi-Monthly;* died at his home in Richmond, November 27, aged 65. In 1863, Dr. Edwards enlisted in the Artillery Corps of the Confederate army and served until the close of the war, and served afterward as surgeon of the First Regiment, Virginia Volunteers. He attended his first course of medical lectures at the University of Virginia. In 1868 he moved to Lynchburg, where he remained until 1872, when he removed to Richmond. He was a member of the American Medical Association; a charter member of the Medical Society of Virginia and recording secretary since 1870; a member of the Southern Surgical and Gynecological Association; past president and honorary fellow of the Richmond Academy of Surgery; from 1872 to 1908 he was a member of the State Board of Health. His work as a teacher began in 1874, when he became lecturer on anatomy in the Medical College of Virginia; in 1875 he was elected lecturer on materia medica and therapeutics and served in this capacity for two years. In 1893 he was made professor of practice of medicine in the University College of Medicine, Richmond, and from 1900 to 1907, was professor of clinical medicine and dean of the medical faculty of the institution and later emeritus professor. His hospital experience began in 1867, when he served for five months as house physician at Charity Hospital, Blackwell's Island, and later as assistant physician to Dr. M. Gonzales Echeverria, at his hospital for nervous diseases, Lake Mahopac, N. Y. In 1902 Dr. Edwards was elected an honorary member of the Medical Society of Virginia, and at the session of that body in Roanoke, in 1909, he was presented with a purse containing $1,000 as a token of the affection in which he was held by the members.

David Nathaniel Kinsman, M.D. A veteran physician and educator and public-spirited and progressive citizen of Columbus, O.; died at his home in Columbus, November 24, from heart disease, aged 76. Dr. Kinsman was graduated from the Medical College of Ohio, Cincinnati, in 1863, and since 1866 practiced in Columbus. He was a member of the American Medical Association; formerly president of the Ohio State Medical Society; a member of the American Academy of Medicine, and Columbus Academy of Medicine: a member and first president of the Columbus Medical Society in 1882. From 1872 to 1874 he was professor of diseases of women and children in Starling Medical College: professor of practice of medicine in Columbus Medical College from 1875 to 1892; professor of nervous diseases in Starling Medical College from 1892 to 1898; professor of practice of medicine in Ohio Medical University from 1898 to 1907, and thereafter emeritus professor. For many years he was chief of staff of the Protestant Hospital, Columbus. He served as health officer of Columbus from 1893 to 1897, and was a member of the Ohio Live Stock Commission from 1886 to 1900. At a meeting of the physicians of the city, November 27, presided over by Jesse A. Van Fossen, Dr. John H. J. Upham spoke in laudation of "Dr. Kinsman, the Teacher;" Dr. John M. Dunham on "Dr. Kinsman, the Advisor;" Dr. Theodore W. Rankin on "Dr. Kinsman, the Physician and Student," and Dr. John W. Wright, on "Dr. Kinsman as a Friend and Associate." Dr. Florus F. Lawrence then narrated numerous instances of sacrifices made by Dr. Kinsman for the sake of friends and patients.

Christian Archibald Herter, M.D., treasurer of the Rockefeller Institute for Medical Research, and one of the board of five referees appointed by the President of the United States to act as advisers of the Department of Agriculture in the enforcement of the national Food and Drugs Act, died at his home in New York City, December 5, aged 45. He was a native of Glenville, Conn., received his preliminary academic education in New York City, and was graduated from the College of Physicians and Surgeons in 1885. His especial work was that of an investigator and chemical pathologist. He was professor of pathologic chemistry in the University and Bellevue Hospital Medical College from 1898 to 1903, and professor of pharmacology and therapeutics in the College of Physicians and Surgeons since that time. Dr. Herter was a prolific writer, his more ambitious works being those on "Diagnosis of Nervous Diseases," published in 1890, and "Lectures on Chemical Pathology," which appeared twelve years later. From 1894 to 1904, Dr. Herter was visiting physician to New York City Hospital. He was a member of the American Medical Association, New York Academy of Medicine, Association of American Physicians, American Physiological Society, American Society of Experimental Biology and Medicine and other scientific bodies. Dr. Herter had been in ill health for more than a year, but his death was due to pneumonia.

David Lynn Magruder, M.D. University of Maryland, Baltimore 1849, Brigadier General, Medical Corps, U. S. Army, retired, died at his home in Bryn Mawr, Pa., November 22, aged 85. He entered the Army as an assistant surgeon in 1850; was made captain five years later, in 1862 he was made major, in 1882, lieutenant colonel, in 1886, colonel, and was retired April 23, 1889, by operation of law on account of age. He served as medical director of the Department of the Missouri at St. Louis until October, 1863, and then became chief medical purveyor at Louisville. After service as medical director of the departments of the Platte and Arizona, he again served as medical director of the Department of the Missouri, until 1884. He was brevetted lieutenant colonel in 1865 for faithful and meritorious service during the war, and was advanced to brigadier general on the retired list in 1904 on account of Civil War service.

Frederick W. Van Slyke, M.D. Minnesota Hospital Medical College, Minneapolis, 1883, a member of the American Medical Association, Minnesota Valley Medical Society, American Academy of Ophthalmology and Oto-Laryngology, and the Heidelberg (Germany) Ophthalmological Society, ophthalmologist and otologist on the staff of the City and County Hospital, St. Paul, University Free Dispensary and Protestant Orphan Asylum, died in St. Joseph's Hospital, St. Paul, November 23, from hemorrhage of the stomach, aged 53.

John D. Axline, M.D. Medical College of Ohio, Cincinnati, 1869, a member of the American Medical Association, a veteran of the Civil War, and first president of the Red, White and Blue Society, of which the Grand Army of the Republic was an outgrowth, for twenty-six years local surgeon of the Baltimore and Ohio Railroad at Shawnee, O., for twelve years surgeon of the C. H. and S. Railroad, a member of the Seventieth General Assembly of Ohio, died at his home in Shawnee, November 19, from diabetes, aged 68.

Samuel Alexander, M.D. Bellevue Hospital Medical College, 1882, a member of the American Medical Association, New York Academy of Medicine, New York Surgical Society, and American Association of Genitourinary Surgeons, professor of diseases of the genitourinary system in Cornell University, surgeon to Bellevue Hospital, and consulting surgeon to the Montefiore Hospital, died in the New York Hospital, November 29, after an operation for appendicitis, aged 52.

James H. Green, M.D. Medical College of Ohio, Cincinnati, 1884, a member of the American Medical Association, Association of Surgeons of the Baltimore and Ohio Railway, Big Four Railway Surgeons' Association, and National Association of United States Pension Examining Surgeons, local surgeon at Mount Vernon, Ind., for the Big Four and Baltimore and Ohio systems and local member of the pension board, died at his home, November 21, from nephritis, aged 51.

Oliver Roland, M.D. University of Pennsylvania, Philadelphia, 1875, a member of the American Medical Association, for many years a member of the school board and board of health of Lancaster, Pa., for twenty years physician to the Children's Home and Hospital, attending physician to St. Joseph's Hospital, and consulting physician to the Lancaster General Hospital, died at his home, November 20, from cerebral hemorrhage, aged 60.

William Robert Bross, M.D. College of Physicians and Surgeons, New York City, 1881, formerly a railway surgeon in Costa Rica, and port health officer of Port Limon, a member of the yellow fever commission for South America, since 1889 a member of the staff of the Equitable Life Assurance Company, and for several years medical director of the company; died at his home in Babylon, L. I., November 21, from cerebral hemorrhage, aged 56.

Alvah Coit Van Syckle, M.D. New York University, New York City, 1878, a member of the Medical Society of New Jersey, and vice-president of the Tri-County Medical Society, twice mayor of Hackettstown, a member of the board of education, and president of the Warren County Medical Society, died suddenly while attending a meeting of the society, November 22, from heart disease, aged 57.

Robert Quincy Gray, M.D. Washington University, St. Louis, 1907, a member of the Missouri State Medical Association, formerly a practitioner of Cabanne, Mo., later surgeon to the Guggenheim lead mines in Mexico, died in a hotel in San Antonio, Texas, November 24, from the effects of a gunshot wound believed to have been self-inflicted with suicidal intent, aged 27.

David Sisson, M.D. Physio-Medical Institute, Cincinnati, 1876, a member of the American Medical Association, a veteran of the Civil War, for several years secretary of the Ohio Valley Medical Association, for several years health officer of Middleport, Ohio, at one time assessor of Yuma County, Colo., died at his home, November 15, from cardiac asthma, aged 66.

William Watson, M.D. Rush Medical College, 1854, surgeon of the Eleventh Iowa Volunteer Infantry during the Civil War, and for two years surgeon-in-chief of the Military Hospital, Rock Island, Ill., a practitioner of Dubuque, Iowa, until 1901, and thereafter of River Forest, Ill., died at the home of his son in that place, November 21, from the effects of a fall, aged 84.

Stephen G. Cook, M.D. New York University, New York City, 1857, for twenty-five years police surgeon of New York City, and formerly president of the Board of Police Surgeons; surgeon of the One Hundred and Fiftieth New York Volunteer Infantry during the Civil War, died at his home in New York City, November 21, from senile debility, aged 79.

William H. Williams, M.D. Western Reserve University, Cleveland, 1900, for six years local surgeon of the Lake Shore System and superintendent of the board of health at Collinwood, Ohio, and mayor of that city in 1909 and until it was annexed to Cleveland, died in the Charity Hospital, Cleveland, November 17, from heart disease, aged 40.

J. G. Cox, for sixty years a practitioner of medicine of Jacksonville, Ill., and Humboldt, Neb., a veteran of the Mexican War, assistant surgeon of the One Hundred and Fiftieth Illinois Volunteer Infantry during the Civil War, died at his home in Humboldt, Neb., July 15, from senile debility, aged 87.

Frank E. McGann, M.D. Barnes Medical College, St. Louis, 1904, a member of the Illinois State Medical Society and coroner of Brown County, and formerly secretary and treasurer of the Brown County Medical Society, died at his home in Mount Sterling, November 28, from pneumonia, aged 30.

Thomas Lincoln Wells, M.D. Bellevue Hospital Medical College, 1883, a member of the Medical Society of the State of New York, and Brooklyn Neurological Society, formerly a member of the staff of the State Hospital for the Criminal Insane, died at his home in Brooklyn, October 20, aged 49.

Jesse M. Jones (license, Ind., 1897), a member of the Indiana State Medical Association, a practitioner of Indiana for forty-two years, for four years member of the Pension Examining Board of Cataract, Ind., a veteran of the Civil War, died at his home, November 1, aged 75.

Charles L. Mitchell, M.D. Jefferson Medical College, 1880, one of the founders of the Medico-Chirurgical College of Philadelphia and for many years professor of chemistry in that institution, died in Presbyterian Hospital, Philadelphia, November 24, from heart disease, aged 58.

Linn Archibald Kelly, M.D. Bennett Medical College, Chicago, 1869, a member of the school board and city physician of Winona, Minn., a member of the local board of U. S. pension examiners, died at his home, November 24, from septicemia due to an operation wound, aged 65.

George Henry Plitt, M.D. State University of Iowa, Iowa City, 1895, a member of the Kentucky State Medical Association, representative from Hancock County in the state legislature, was found dead in his home at Lewisport, November 22, from heart disease, aged 39.

Robert C. Tuttle, M.D. Albany (N. Y.) Medical College, 1863; assistant surgeon in the U. S. Navy from 1862 to 1866; formerly of Rockland, N. Y., but for ten years past associated with his son at Roscoe, N. Y.; died at his home, November 10, from angina pectoris, aged 76.

Albert Berry Clanton, M.D. Jefferson Medical College, 1852; of Hattiesburg, Miss.; a lieutenant in the Mexican War, and a surgeon in the Confederate service during the Civil War; died at the home of his daughter in St. Louis, February 17, from pneumonia, aged 81.

George R. Millhouse, M.D. Columbus (Ohio) Medical College, 1878, a veteran of the Civil War, formerly of Allentown and Elida, Ohio, but for some time past a resident of Lima; died at the home of a niece in Piqua, Ohio, October 22, from heart disease, aged 70.

John Henry Shenk, M.D. University of Pennsylvania, 1861; a member of the Medical Society of the State of Pennsylvania; formerly school director and a member of the Lititz city council, died at his home, November 23, from uremia, aged 71.

John W. Cringan, M.D. University College of Medicine, Richmond, Va., 1901, of Arrington, Va.; a member of the American Medical Association, died on a Chesapeake and Ohio train at Ashcake, Va., November 22, from heart disease, aged 33.

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Association News

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The chairman of the committee earnestly requests all those who expect to attend the session, particularly those living in the middle and eastern states, to communicate with him as soon as possible as to the route, southern, central, or northern, they desire to take west from Chicago. In this way, ample and satisfactory accommodations can be arranged for all. If any group of members from any city or territory will express their wishes to the committee, every effort will be made to secure special cars or train as may be necessary for their accommodation over the best route possible.

Applications for reservations on the special trains or on regular trains from Chicago west may now be filed with the Chairman of the Committee on Transportation, who will see that they are all properly taken care of.

M. L. Harris, Chairman,
Committee on Transportation.

100 State Street, Chicago.

Pharmacology

A FRAUDULENT DRUG-HABIT "CURE"

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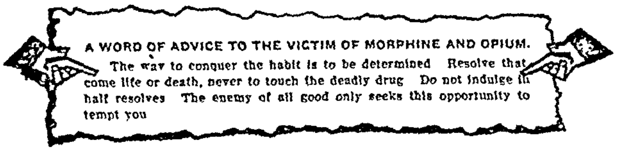
When the government commenced investigating the Compound Oxygen Association, one of the post-office inspectors wrote, under an assumed name, representing himself as a man 50 years old who had been addicted to the morphin habit for about six years, and who was using about 15 grains daily. Coblentz replied that he could be cured in four treatments, and that the cost of treatment would be $11. Advertising leaflets were also sent to this inspector in which it was stated that Coblentz' treatment was a "permanent and positive cure for the morphin habit." By implication the patient was led to believe that the "treatment" contained no morphin. For instance:



A WORD OF ADVICE TO THE VICTIM OF MORPHINE AND OPIUM.

The way to conquer the habit is to be determined Resolve that come life or death, never to touch the deadly drug Do not indulge in half resolves The enemy of all good only seeks this opportunity to tempt you

Fig. 1.—A photographic reproduction (reduced) of a paragraph in one of Coblentz' pamphlets. What can be thought of a man who urges the victims of the morphin habit "never to touch the deadly drug," while at the same time he is supplying "treatments" which were loaded with morphin?

> "Do not take every cure you see advertised, for how easy it is to disguise the drug under the garb of a new cure and beguile the poor, unsuspecting victim into the belief of being cured while all the time he is taking the drug under a different name."
>
> "The cure is simple and harmless."
>
> "I do not send out trial bottles. This is the method pursued by the medical shark. Half the time you receive your old drug (from whose clutches you are trying to escape) with the taste disguised."
>
> "I can truthfully say I can and will cure you if you will put your case in my hands."

The inspector sent $11 to Dr. Coblentz and received seven packages of medicines, which were analyzed by chemists in the Department of Agriculture.

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No. 2.—A 16-ounce bottle of brown liquid, having essentially the same composition as No. 1, except that there was some quinin salt in addition.

No. 3.—An 8-ounce bottle of liquid similar to that in Nos. 1 and 2, but with a smaller percentage of morphin.

No. 4.—A stomachic preparation, composed of water, alcohol, capsicum and morphin derivatives.

No. 5.—"Nervine Tablets;" chocolate-coated tablets of iron and quinin.

No. 6.—"Stomach Tablets;" sugar-coated tablets containing sodium bicarbonate, capsicum and strychnin.

No. 7.—"For the Bowels;" sugar-coated, laxative tablets containing aloes, cascara, ginger and licorice.

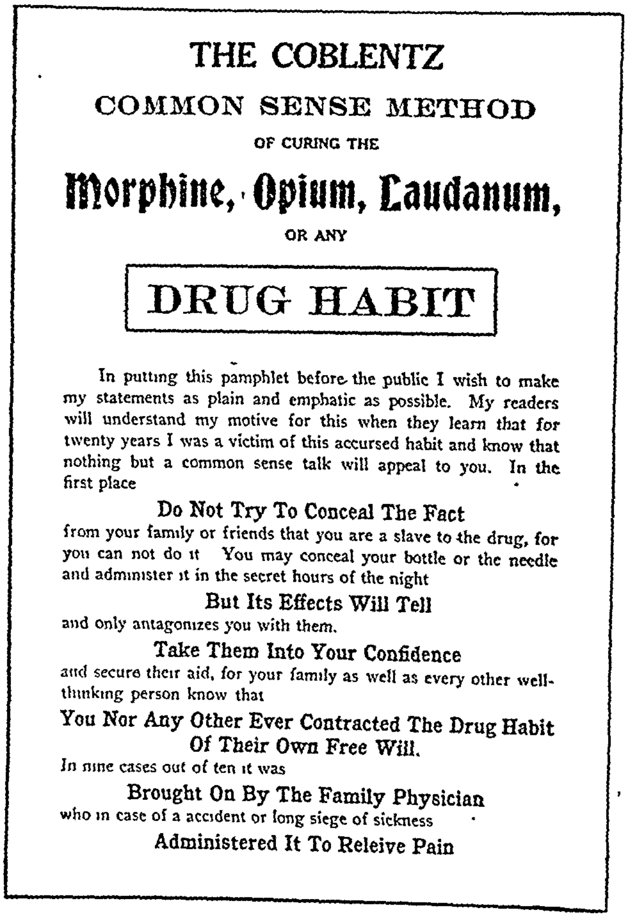
It was shown at the trial that the twenty-four-hour dose of the "treatment" sent by Dr. Coblentz to the person who was supposed to be using 15 grains of morphin daily, contained 20 grains of morphin!

The post-office inspector testified that he had interviewed Dr. Coblentz, and that Coblentz had told him that he was "treating" about twenty-five patients for the morphin habit, and that these patients had been under "treatment" for from five to twenty years! Coblentz also admitted that the medicine which he sold to patients for the cure of the morphin habit contained morphin in about the same amount as the patient was accustomed to using, and that this quantity was continued throughout. Coblentz is said further to have admitted that he had never really cured the appetite of anyone addicted to the morphin habit, but that the patients reached the point where he called them cured, but they had to keep up the use of the medicines. Correspondence was submitted at the trial which showed that one of Coblentz' patients had been taking the "cure" for fifteen years and was still taking it!

In view of all the evidence, the acting assistant attorney general summed up the case against Coblentz as follows:

> "The respondent is engaged in mailing letters and printed circulars to morphin habitués, and is soliciting and obtaining money from such persons by promising to cure them of that habit—that is to say, of the taste, desire and appetite for morphin, whereas, in truth, he does not intend to cure or try to cure such habit, but instead intends to furnish patients with a preparation containing substantially the same amount of morphin as they are accustomed to take, his purpose being to deceive such persons and to profit by their appetite for morphin and to get money out of them under false and fraudulent pretenses of furnishing them a cure for the habit, when he is simply furnishing the drug itself and not a cure.
>
> "On full consideration of the case, I find that Dr. J. W. Coblentz, under his own name and under the name of the Compound Oxygen Association, Fort Wayne, Ind., is engaged in carrying on a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises. I recommend, therefore, that a fraud order be issued against him and said Association."

The order was issued.



THE COBLENTZ

COMMON SENSE METHOD

OF CURING THE

Morphine, Opium, Laudanum,

OR ANY

DRUG HABIT

In putting this pamphlet before the public I wish to make my statements as plain and emphatic as possible. My readers will understand my motive for this when they learn that for twenty years I was a victim of this accursed habit and know that nothing but a common sense talk will appeal to you. In the first place

Do Not Try To Conceal The Fact

from your family or friends that you are a slave to the drug, for you can not do it You may conceal your bottle or the needle and administer it in the secret hours of the night

But Its Effects Will Tell

and only antagonizes you with them.

Take Them Into Your Confidence

and secure their aid, for your family as well as every other well-thinking person know that

You Nor Any Other Ever Contracted The Drug Habit Of Their Own Free Will.

In nine cases out of ten it was

Brought On By The Family Physician

who in case of a accident or long siege of sickness

Administered It To Releive Pain

Fig. 2.—Photographic reproduction (reduced) of the first page of one of Coblentz' pamphlets. "The Coblentz Common Sense Method of Curing the Morphin . . . Habit" consisted in substituting a morphin mixture for the simple drug, thus creating a permanent customer for the "treatment!"

Robert C. Tuttle, M.D. Albany (N. Y.) Medical College, 1863; assistant surgeon in the U. S. Navy from 1862 to 1866; formerly of Rockland, N. Y., but for ten years past associated with his son at Roscoe, N. Y.; died at his home, November 10, from angina pectoris, aged 76.

Albert Berry Clanton, M.D. Jefferson Medical College, 1852; of Hattiesburg, Miss.; a lieutenant in the Mexican War, and a surgeon in the Confederate service during the Civil War; died at the home of his daughter in St. Louis, February 17, from pneumonia, aged 81.

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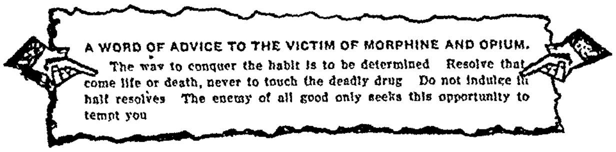

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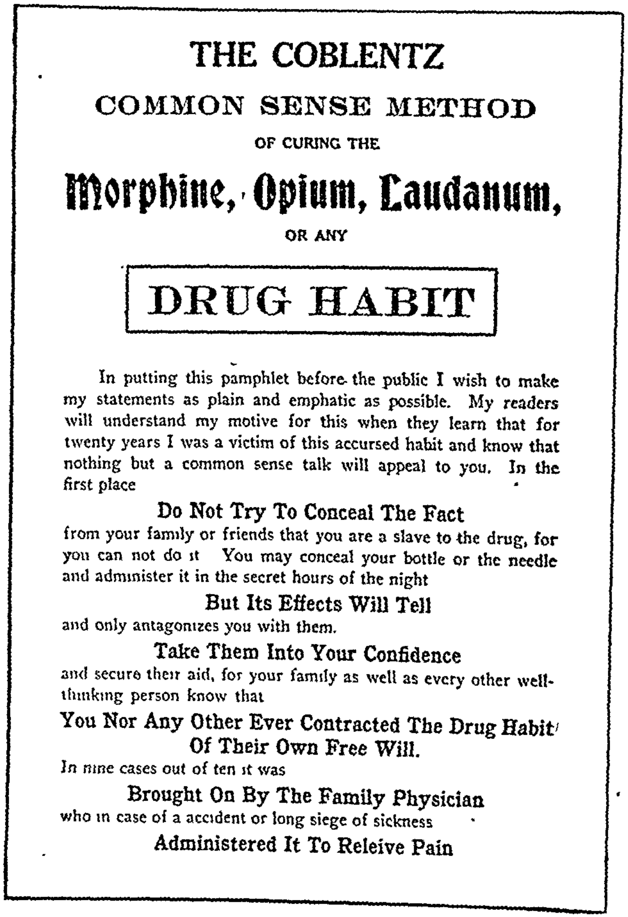

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Correspondence

Foreign Matter vs. the Treponema in Ink Methods

To the Editor:—In The Journal (Nov. 26, 1910, p. 1892), Dr. J. H. Barach gives an interesting criticism of the American India inks with special reference to foreign matter which may be present. His observations are good, especially as regards the "dried" preparations. I desire to add that these inks are not usually sterile, but often contain many microorganisms. Some of these methods, however, especially those in which the "wet" technic has been adopted, have been serving, exceedingly well, men who have found an office diagnosis necessary in many suspected cases of lues (*Arch. Diagnosis*, January, 1910). Can it be possible that this one communication must drive us back to the more tedious methods? Has any person claimed that these inks are free from extraneous material and their use without objection?

It may be well to note the following points:

1 No motions or other indications of life were observed in the "wavy fibers."

2 There is no mention that the turns of these lines or fibers were "close and regular" (Jordan's "General Bacteriology")

3 No emphasis was laid on the following important differentiation. "apparent rigidity vs. flexibility of spirals"

4 Stitt ("Practical Bacteriology") offers a test which should rule out "cracks" and which may be stated as follows "*Treponema pallidum*, . . . is characterized by its very geometric regularity in the spirals which are deeply cut, etc."

5. It is manifestly unfair to condemn any of these methods until their critic can say, "After a careful investigation, I cannot distinguish between these fibers and the true *Treponema pallidum*"

And with this last point in view, I believe that I have occasion to criticize the term "experienced microscopist" when used in reference to any ordinary clinical examination. Very often the fact is overlooked that, after all, many of our so called country doctors recognize cotton fibers, *Spirochæta refringens*, spirilla, cracks, etc, and dare not conscientiously term any and every wavy line, Schaudinn's specific microorganism. (It has been pointed out repeatedly, by the way, that the term "treponema" is preferable to "spirochete," and I believe that the latter term should be dropped, so far as the germ of syphilis is concerned) The physicians who are doing this work every day are not tyros but usually graduates of our best schools and received their training during the era of microscopy

Please to remember that a good Giemsa's stain requires two hours and is complicated and that the dark field attachment for the practitioner is an expensive asset. I do not believe that the article in question was intended to condemn the American inks, though it might be so interpreted by the man who has not yet observed their good points There is a tendency in medicine, however, to belittle anything which will make laboratory work possible to the man outside the college or hospital and an attempt—unconscious often, I believe—to convince him that he is not capable of recognizing so simple a thing as the urinary cast What is the result? Such examinations are left undone

Far be it from me to hold up any of the ink methods as model procedures Beauty is lacking The preparations do not in every portion show spirochetes Many bacteria are present in the ink and I believe that special inks should be made up for these examinations (let some chemical or optical company take up the suggestion) I have also observed many fibers and cracks But I have yet to find the *Treponema pallidum* in a bottle of Higgins' ink and I doubt if it occurs in others Surely, if it does, the war against the public drinking cup should be waged against another dangerous carrier of the modern black plague. These difficulties may be overlooked when we are considering diagnosis

Although I prefer to make these examinations from suspensions in warm, physiologic salt solution, I see no objection to studying these preparations after they have dried. It should be remembered however, that desiccation causes often, though not always, a loss of characteristic windings

In conclusion, permit me to say that the physician who has mastered his laboratory courses in microscopy may depend on the ink methods—he may still search for casts even though a few cotton fibers from his towel have fallen on his slide.

B. G. R. Williams, M.D., Paris, Ill.

Another Clean Medical Journal

To the Editor—An editorial in The Journal, Aug. 20, 1910, p 697, discusses the action of the *Gulf States Journal of Medicine and Surgery* in eliminating from its pages advertisements of such medicinal preparations as do not comply with the requirements of the Council on Pharmacy and Chemistry of the American Medical Association

May I call your attention to the fact that the *Cleveland Medical Journal* in November, 1909, announced a similar program and since then this rule has been observed in accepting new advertisements? Existing contracts, of course, had to be observed, and although practically all of the objectionable advertisements appeared for the last time in the issue of December, 1909, it was not until August, 1910, that the last one had disappeared.

Publicity of such facts as the above should certainly help in inducing other independent journals to adopt a similar censorship. William H. Weir, Editor, Cleveland, Ohio

[See Current Comment in this issue —Ed.]

Request for Specimens

To the Editor—May I ask through your columns for a few specimens? I need particularly a specimen of a tuberculous spine, a tuberculous sternoclavicular articulation and a tuberculous sacro-iliac articulation. If any of your readers, on removing one of these at autopsy will place it in a 2 per cent. dilution of liquor formaldehyde and will send it to me, I shall be glad to pay expressage, and shall be very grateful to him Leonard W. Ely, Metropolitan Bldg, Denver.

Coblentz Not With Medical Research Corporation

To the Editor:—In one of the summer numbers of The Journal (Aug. 6, 1910, p. 519), there appeared an article relative to the "Medical Research Corporation" ["International Encyclopedia of Ethical Non-Official Pharmaceuticals"] with which I was at that time connected as editor-in-chief. I call attention to the fact that I have severed my connection with this corporation V Coblentz, New York City.

Queries and Minor Notes

Anonymous Communications will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

FINAL RESULTS IN VARICOSE ULCERS OF THE LEG

To the Editor—Please inform me what have been the final results in varicose ulcers of the leg on which an operation was performed by excision of veins and otherwise, and if a support like an elastic stocking must be worn afterward Nagroc

Answer—The final results of the treatment of varicose ulcers of the leg in which an operation such as excision of veins or otherwise has been performed depend largely on the nature of the operation done The ulcers are so intimately dependent on the varicose veins that the end results of the treatment of the latter represent equally well the end results of the treatment of the former

Perhaps the operation most frequently performed at the present time is the modified Trendelenburg operation, which consists in the excision of from 8 to 10 cm of the internal saphenous vein just below the saphenous opening This operation gives on an average about 50 per cent of objective cures and 75 per cent of subjective cures in cases followed from five to ten years The longer the elapsed time after the operation the greater the percentage of recurrences

The Schede operation, which consists of a circular incision around the leg just below the knee with the ligation and section of all the veins encountered, gives permanent good results in about 30 to 35 per cent of the cases.

Madelung's operation, or some modification of it, which consists in the more or less complete excision of the internal saphenous system of veins, is the most extensive operation and the least likely to be followed by a recurrence, but it is unnecessarily severe in a large percentage of the cases

Cases of varicose veins of the leg may be divided into three classes

1 Those in which the enlarged veins are all tributary to the internal saphenous and in which pressure on the internal saphenous after depleting the veins, prevents their refilling when the patient resumes the erect position

2 Those in which the enlarged veins communicate with the short or posterior saphenous in addition to the internal saphenous, and therefore pressure on the internal saphenous alone does not prevent the refilling of the veins

3 Those in which, in addition to the conditions found in Classes 1 and 2, there are communications between the superficial and deep set of veins by means of large sinuses, usually on the calf and inner surface of the leg, with the formation of large knots of veins in this region, and the veins refill even when pressure is made on both the internal and short saphenous veins

In Class 1 Trendelenburg's operation is usually sufficient, in Class 2 Trendelenburg's operation combined with excision of a section of the posterior saphenous In Class 3 there must also be added excision of the 'knots of veins with ligation and section of the communicating sinuses between the superficial and deep set of veins

If the cases be thus differentiated and the proper operation selected for each case, permanent results may be expected in from 90 to 95 per cent Of course, ulcers when present should receive proper treatment If they are large it is best to excise them completely and cover the surface with a Thiersch graft It is unnecessary to wear an elastic stocking after recovery, but the bandage should not be removed too soon after the patient gets up and around

TORTICOLLIS

To the Editor —Please give me references to articles on the subject of torticollis which have appeared during the past few years

R M Schley, Buffalo, N Y

Answer —The following are some of the articles which have appeared on the subject within the past two years

Bohm, M Etiology of Congenital Torticollis, *Berl klin Wchnschr*, Aug 9, 1909, abstr in The Journal, Sept 18, 1909, p 981

Broca, A Torticollis from Inflammatory Retraction of the Sternocleidomastoid Muscle, *Presse méd*, Sept 12, 1908

Kennedy, R Section of the Posterior Primary Divisions of the Upper Cervical Nerves in Spasmodic Torticollis, *Brit Med Jour*, Oct 3, 1908

Lister, T L Spasmodic Torticollis Following Chorea, *Lancet*, July 24, 1909

Newlin, A A Case of Torticollis, Probably Congenital, *Internat Clin*, 1907, series 17, iv, 255

Peters, A Asymmetry of Face and Skull in Relation to Torticollis, *Munchen med Wchnschr*, Aug 25, 1908

Rowlands, R P Treatment of Wry Neck by Lengthening the Sternomastoid, *Practitioner*, September, 1908, abstr in The Journal, Oct 3, 1908, p 1190

Weinstein, J Torticollis After Removal of Adenoid Vegetations, *Med Klin*, May 9, 1909

Williams, T A Facial Spasm and Tic, Torticollis and Treatment, *Month Cycl and Med Bull*, January, 1910

SEROTHERAPY OF TYPHOID FEVER

To the Editor —Where can I secure bacterial cultures or serums or antityphoid serum and literature on treatment with the serum?

F P Dorsey, Hartington, Neb

Answer —The bacterial cultures and antityphoid serum are described in New and Nonofficial Remedies and the names of manufacturers are there given There is little recent literature with reference to the use of the serums The following, dealing with antityphoid vaccination, may be referred to

Chantemesse, A, and Landouzy Discussion of Antityphoid Vaccination, *Bull de l'Acad de méd*, Feb 8, 1910, referred to in the Paris letter in The Journal, March 5, 1910, p 804

Russell, F F Antityphoid Vaccination, the Immediate Result of the Administration of 3,600 Doses, *Bull Johns Hopkins Hosp*, March, 1910, abstr in The Journal, April 16 1910, p 1337

Eckelman M M Vaccination Prophylaxis in Typhoid, *Jour. Indiana Med Assn*, April, 1910

Hartsock, F M Antityphoid Vaccination, Result of 1,100 Inoculations The Journal, June 25, 1910, p 2123

Gosman, G H R The Present Status of Typhoid Inoculation, The Journal, Oct 1, 1910, p 1169

STAINING SMEARS OF SPIROCHÆTA PALLIDA

To the Editor —Please describe an effective way to make the smears and stain the *Spirochæta pallida* to be used by the general practitioner

C A Manahan, Center Point, Iowa

Answer —The chancre or a skin lesion is cleansed with soap and water lightly curetted, the blood wiped off, and a thin smear made from the exuded serum Enlarged glands may be examined by aspirating a drop of serum from them with a hypodermic syringe The smear is fixed by drying in the air and then placing for an hour in absolute alcohol and stained for twenty four hours in diluted Giemsa mixture of 1 drop of Giemsa stain to 1 c c of the distilled water The organism stains a delicate violet purple color, while the nuclei of the leukocytes are of a deep blackish red The latter appearance shows that the specimen has been sufficiently stained The organisms are most numerous in moist papules and chancres (when the curettage is carried out at the edge of the lesion) In scrapings from roseola the search is frequently disappointing The organism should be distinguished from *Spirochæta refringens*, *Spirochæta dentium*, etc

SODIUM CITRATE IN FURUNCULOSIS

Since publishing the query of J L L in the issue of Nov 26, 1910 p 1911, in regard to Wright's method of using sodium citrate in furunculosis we have received a number of letters giving references to this method Nearly all refer to Crandon's work on 'Surgical After Treatment,' which explains Wright's method, or to an article by Crandon in the *Annals of Surgery*, October, 1910, abstracted in The Journal, Nov 5, 1910, p 1685, which also explains the Wright method of using sodium citrate solution in furunculosis, which we omitted in our former answer to the query.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Dec 3, 1910

Brown, Wilmont E, M R C, November 21, relieved from duty at Army General Hospital, Fort Bayard N Mex, and ordered to proceed to his home Lieutenant Brown will stand relieved from further active duty in the Medical Reserve Corps, to take effect on his arrival at his home

Weed, Frank W, captain, November 26, granted one month's leave of absence to take effect about Dec 15, 1910

Havelkampf, C W, lieutenant, November 22, reports departure on ten days leave of absence

Wolven, F Homer, D S, November 21, reported at Fort Casey, Wash, for temporary duty

Leslie Samuel H, D S, November 25, left Fort Robinson, Neb, en route to Fort McKenzie Wyo, for temporary duty

Usher, F M C, major, November 26, granted fourteen days' leave of absence

Stone, John H, major, November 25 granted four months' leave of absence with permission to go beyond the seas

Eber, Albert H, M R C, November 15, ordered to proceed from Fort Moultrie S C, to Fort Dade, Fla, for temporary duty, during the absence of First Lieut John H Hereford M R C

Jenkins, Frederick E, M R C, November 17, will report for duty with Co I Signal Corps, en route to Fort D A Russell, Wyo, on the completion of this duty to return to station at Fort Leavenworth Kan

Mason, George L, D S, November 16, reported for duty (temporary) at Fort Yellowstone, Wyo

Scott, H O D S, November 26, reported for duty at Fort Hamilton, N Y

Dougherty, James C, M R C, November 27, reported for temporary duty at Fort Huachuca, Ariz, left Fort Bliss, Texas, November 25, 1910

Miller, E W, captain November 28, granted leave of absence to and including Dec 25 1910

Brown, H L, captain, November 28, left Fort Morgan, Ala, on ten days' leave of absence

Candy Charles M, lieut col, December [illegible] is duties as chief surgeon, Department of Cal [illegible] he duties of medical superintendent, Army [illegible] an Francisco, relieving Lieut Col Henry S T [illegible]

Medical Corps, U. S. Navy

Changes for the week ended Dec 3, 1910

Hibbett, C T, medical director, commissioned medical director from Oct 7, 1910

Stone, E P, medical inspector, commissioned medical inspector from Aug 24 1910

Pickrell, G medical inspector, commissioned medical inspector from Oct 7, 1910

Trible, G B P A surgeon, commissioned passed assistant surgeon from June 27 1910

Hale, G D, and Bunker, C W O, P A surgeons, commissioned passed assistant suregons from Sept 21, 1910

Higgins, M E, P A surgeon commissioned passed assistant-surgeon from Oct 4, 1910

Stanley, A C, asst-surg, transferred to the retired list from Nov 23, 1910.

Ely, C. F., P. A. surgeon, detached from the *Wilmington* and ordered home.

Minter, J. M., asst.-surg., detached from the *Monterey* and ordered to the *Wilmington*

Bloedorn, W. A., asst.-surg., detached from the naval hospital, Canacao, P. I., and ordered to the *Monterey*.

Allen, D. G, asst.-surg., detached from the naval hospital, Canacao, P. I., and ordered to the *Elcana*.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Nov. 30, 1910.

White, J H., surgeon, leave of absence granted for ten days from Nov. 11, 1910, amended to read eight days from November 13.

McIntosh, W. P., surgeon, leave of absence granted Oct. 22, 1910, amended to read seventeen days from Nov. 11, 1910.

Grubbs, S B., P. A. surgeon, granted seven days' leave of absence from Nov. 28, 1910, on account of sickness.

Anderson, J. F, P. A. surgeon, directed to inspect the Saranac Laboratory for the Study of Tuberculosis, Saranac Lake, N. Y.

Bahrenburg, L. P. H., P. A. surgeon, granted eleven days' leave of absence from Nov. 10, 1910, on account of sickness.

Frost, W. H., P A. surgeon, directed to rejoin station at Washington, D. C., stopping at Des Moines, Iowa, for conference with secretary of state board of health.

Hotchkiss, S. C., asst.-surgeon, relieved from duty on the Revenue Cutter *Bear* and directed to report to the director of the Hygienic Laboratory.

Atiles, P. del Valle, A. A. surgeon, granted thirty days' leave of absence from Dec. 1, 1910.

Gustetter, A L., A A. surgeon, granted fifteen days' leave of absence from Dec 9, 1910.

Tarbell, B C., A. A. surgeon, granted thirty days' leave of absence from Dec. 1, 1910.

Board of medical officers convened to meet at Angel Island, Cal., for reexamining an alien. Detail for board P. A. Surgeon F. E. Trotter, chairman; P. A. Surgeon N. W. Glover; Assistant Surgeon A. J. Lanza, recorder

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—First Weekly Meeting

General Subject for the Month: Diseases of the Skin

ANATOMY OF THE SKIN

EPIDERMIS: Stratum corneum, stratum lucidum, stratum granulosum, rete malpighii.

CORIUM: Pars papillaris, pars reticularis.

SUBCUTANEOUS LAYER: Blood-vessels. Lymphatics. Nerves. Muscles. Glands. Appendages.

PHYSIOLOGY OF THE SKIN

Protective function. Heat regulation, tactile and pain sensations, respiratory and secretory functions, elimination.

GENERAL SYMPTOMATOLOGY

SUBJECTIVE SYMPTOMS: Itching, burning, tingling, pain, tenderness, etc.

OBJECTIVE SYMPTOMS: Primary lesions: Macules, papules, vesicles, blebs, pustules, wheals, tubercles, tumors. Secondary lesions. Scales, crusts, excoriations, fissures, ulcers, scars, pigmentations.

TREATMENT IN GENERAL

HYGIENE: Diet.

MEDICINAL TREATMENT: General tonics, aperients, gastrointestinal antiseptics, diuretics, alteratives, animal extracts, germicides, antipruritics, vasoconstrictors.

LOCAL TREATMENT: Baths, soap, dusting-powders, lotions, ointments, pastes, oils, fixed dressings. Antipruritics, parasiticides, caustics. Mechanical measures.

REFERENCE BOOKS FOR THE FIFTH MONTH

Works on "Diseases of the Skin," by Stelwagon, Hyde, Shoemaker and Crocker.

Pusey: Principles and Practice of Dermatology.
Kaposi: Pathology and Treatment of Diseases of the Skin.
Morrow: Genitourinary Diseases, Syphilology and Dermatology.
Fox: Diseases of the Skin (Photographic Atlas).

Miscellany

Tuberculosis in the Philippine Islands.—It is the opinion held by most persons who have not lived in the tropics that tuberculosis is less prevalent there than in the temperate zones. This, however, according to Dr. Isaac W. Brewer (*Journal of the Outdoor Life*, September, 1910) is not true of the Philippines. Brewer states that the deaths in those islands from tuberculosis outside of Manila in 1907 was 210 per hundred thousand as against 172 in the registration area of the United States, for instance, and that the death-rate from this cause in Manila during 1908 was 486 per hundred thousand as against 89 for the city of St. Paul, Minn. He says that if there is any virtue in sunshine and fresh air there should be but little tuberculosis in those islands, as the climate is rarely so severe even in the rainy season as to compel the inhabitants to keep their houses closed. The habits of the Filipino, however, are such that fresh air is usually lacking in his residence. The rarity of tuberculosis among cattle in the Philippines indicates that the climate itself cannot be responsible for this disease among the natives. Dr. Brewer's study shows that the same causes are operative as apply elsewhere—bad hygienic surroundings, poor food, and improper clothing. The houses of even the better classes are lacking in ventilation and are kept religiously closed during the day to exclude the heat and also at night because of the belief that the night air will cause fever. An actual count of 200 houses in Manila at midnight showed that less than 25 per cent. had the street windows open, and in many there were no windows in the bedrooms. It is not uncommon to find horses and other animals kept in the lower floors of the best houses in Manila. The poorer natives in both the cities and the provinces live in thatched cottages which seem to be well ventilated, but on closer examination it is found that the windows are closed during the greater part of the day and all night; the space beneath the houses is occupied by hogs, goats, and cattle, and beneath the kitchen will be a filthy hog-wallow into which is thrown the refuse from the house. The Filipino is a great chewer and spitter and he expectorates wherever most convenient. There is also a habit of exchanging partially smoked cigarettes and cigars which undoubtedly is a means of conveying the infection of tuberculosis. In addition, over 90 per cent. of the natives are the hosts of intestinal parasites, which, while they may cause no special symptoms in themselves, predispose their host to other infections, particularly tuberculosis. The average native is poorly nourished, living mostly on rice and fish, with occasionally pork and rarely beef, together with a few roots, fruits and green vegetables. The clothing is mostly cotton, which in the rainy season remains damp; shivering natives are a common sight. Except in the larger towns there is a great lack of medical attention, and indeed few towns could support a physician. Brewer believes that the inhabitants would readily avail themselves of hospitals or dispensaries and that much good could be accomplished by the American government by the establishment of such institutions in the small country towns. He thinks that an enthusiastic physician with a few good trained nurses and a supply of drugs could accomplish wonders. An active campaign of education must be instituted, but the methods adopted must be different from those adopted in other countries because the people are not so far advanced in their knowledge of hygiene.

Influenzal Meningitis.—Influenzal meningitis is a rare disease, chiefly restricted to young children, and having a mortality of 90 per cent. About 40 cases have been reported in the literature but it is probably more common than these reports indicate. David J. Davis (*Tr. Chicago Path. Soc.*, June, 1910) reports seven cases of influenzal meningitis which were recognized in Chicago in a little over a year, all resulting fatally, and in duration varying from three to fourteen days. All the patients were infants, the oldest being 13 months and the youngest five days. A definite history of "cold" preceding the meningeal trouble was obtained in four cases. Temperature as a rule was variable and ranged from 100 to 105 F. or higher. Petechial hemorrhages in the skin occurred in one case and herpes labialis in one. Eye symptoms as a rule were present and also marked retraction of the head and rigidity of the back and limbs. Lumbar puncture was made in four cases, and in all turbid fluid under pressure was obtained, which contained many leukocytes, the polynuclear cells predominating (usually about 80 per cent.). Five of the cases were examined post-mortem. An abundant highly purulent greenish yellow friable leptomeningeal exudate was present in four; in the remaining case, in which the patient died on the third day, the exudate was scant and not characteristic. As a rule the exudate was very abundant at the base and over the frontal lobes. In one case there was an extensive hemorrhagic serofibrinous exudate lining the dura, and in one case a large cerebral abscess occurred in the right hemisphere, and extensive acute softening occurred in the cortex of the opposite hemisphere. Internal hydrocephalus existed in this case also. Acute bronchitis was present in four and bronchopneumonia in three cases Acute rhinitis was found in three, one showing extensive necrosis of the entire nasal mucosa involving the cribriform plate. Bilateral otitis media occurred once and acute gastro-enteritis once. In all cases acute degeneration of the various organs was evident. The influenza bacillus was isolated in practically pure culture from the meningeal exudate and cerebrospinal fluid in all cases. In two it was found pure in the heart's blood; in one in the peritoneal fluid, and in one in the pericardial fluid. In three cases it occurred mixed with streptococci in the bronchial secretion, and once it was grown from the surface of the nasal mucosa. The atrium of infection in four cases was in all probability the upper respiratory passages, in two of which the infection undoubtedly penetrated the cribriform plate. The serum obtained from the heart's blood in four cases failed to agglutinate influenza bacilli. The bacilli are pathogenic for guinea-pigs in moderate doses, and are about equal in this respect to influenza bacilli isolated from other sources. Morphologically and culturally they are identical with Pfeiffer's bacillus, all being strictly hemophilic and showing the property of symbiosis The grouping of these cases is interesting. The occurrence of the disease in twins beginning on the same day is suggestive of a common source of infection, but this could not be determined. Two patients came from a small institution for children in which an epidemic of 'colds" had existed for several weeks. The children were all constantly in intimate contact with each other. The second of these patients developed the disease about four weeks after the first was taken ill, or about two weeks after her death. Three of the cases developed in institutions They did not occur in the poorer parts of the city. Except two, which developed in October, all the cases occurred in the winter months A general influenza epidemic was not raging during this period.

Utero Ovarian Asthma.—E. Percepied cites a number of instances in which reflex action from the genital organs was responsible for the development of asthma; in fully 40 per cent. of his female patients with asthma the attacks came on with or just before menstruation In 3 of the patients in this class the attack always preceded the menses by 4 days; in one patient the attack followed the period. In one case the patient had a cough during menstruation and in the course of years this cough finally became actual asthma Among his 381 asthmatic female patients the asthma came on at the menopause in 26 and 12 others had then spasmodic coryza, or a wheezing bronchial affection without true asthma. In 7 cases there was great aggravation of the asthma during the menopause. In 8 cases the asthma came on for the first time during a pregnancy or the puerperium and recurred in some of the patients during later pregnancies, while 2 other patients were relieved during pregnancy. Tentative treatment with ovarian or thyroid extract may be instituted, he says, though he never observed any improvement from ovarian treatment in his climacteric cases. The tendency to respiratory troubles in general should be combated and this is the main factor in treatment His article on the subject appeared in the *Annales de la Soc. Méd.-chir. de Liége*, 1910, XLIX, 126.

Mortality from Infectious Diseases in Europe.—F. Loeb at Munich has compared the vital statistics of various European cities and tabulated the condensed findings in the *Munchener medizinische Wochenschrift*, Nov. 8, 1910, as follows: For each 100,000 inhabitants the highest mortality was for

Small pox	336.4 at Marseilles,	35.6 at Moscow
Typhoid	81.7 at Marseilles,	58.5 at Athens
Diphtheria and croup	37.0 at Dresden,	33.9 at Moscow
Measles	101.1 at Rome,	45.9 at Vienna
Whooping cough	37.3 at Copenhagen,	32.2 at Edinburgh
Scarlet fever	45.4 at Warsaw,	39.6 at Moscow
Tuberculosis of lungs and other organs	631.2 at Prague,	
Pulmonary tuberculosis	397.0 at Paris,	337.8 at Lyons
Pulmonary tuberculosis and other respiratory diseases	793.1 at Moscow,	718.5 at Lyons
Pneumonia	303.5 at Warsaw,	238.7 at Brussels
Malignant disease	228.7 at Prague,	157.6 at Lyons

The mortality from pulmonary tuberculosis was:

In seventy two cities of France with population over 30,000	325.7
In twelve cities of Greece with population over 10,000	276.5
In forty nine cities of Spain	238.3
In Switzerland	172.1
In German Empire	159.2
In the Netherlands	120.7
In England and Wales	111.7
In Belgium	101.3

In the 350 largest towns in the German Empire from tuberculosis of lungs and other organs the mortality was 192.4. From "Tuberculosis of Other Organs," Switzerland, 78.5; 49 cities of Spain, 65.2, 72 cities of France, 61.4; England and Wales, 46.9; Germany, 22.5 The mortality from diphtheria and croup for 100,000 inhabitants was:

In Russia	59.1	In German Empire	22.9
In 49 cities of Spain	19.1	In 72 cities of France	9.0
In the Netherlands	8.2		

The mortality from scarlet fever for 100,000 inhabitants was:

In Russia	111.0	In Greece	20.0
In German Empire	19.1	In the Netherlands	5.3

The mortality from small-pox for 100,000 inhabitants was:

In Russia	51.6
In seventy two cities of France with population over 30,000	27.1
In forty nine cities of Spain	16.0
In the German Empire	0.1

British Comment on Medical Practice in the United States.—The laws regulating the practice of medicine in the various states and territories of the United States of America differ to a considerable extent in detail. In spirit, however, they are beginning to assume that uniformity which all medical reformers must desire for them. It has long been pointed out that one of the most open doors to abuse of medical practice in the United States was the fact that while in some states an excellent medical curriculum was required before admission to legal practice, in other states but little scientific training was exacted and freedom to practice was extended to dangerous forms of quackery. This position of affairs had its origin, of course, in the evolution of the United States, certain divisions of the country being in the forefront of civilization, while others were, to say the least, in a rudimentary plight; but of late a great process of leveling-up has been witnessed. The progress of the United States is in no way better shown than in the fact that throughout its vast length and breadth there is now an attempt to secure for the people of the country adequate medical treatment based on scientific grounds. . . . We must continue to warn the British medical man desiring to practice his profession in the United States that in all the more enviable centers he will find a vast number, almost a plethora, of medical men, the great proportion of whom have been thoroughly well educated and trained He must remember also that in the more important states, generally speaking, although the remuneration may rule high, the expense of living is proportionate He will understand that the less highly the state is developed the more easy will it be for him to obtain a footing, but the less pleasant in all probability will be his professional career.—*Lancet* (London), August 27.

State Boards of Registration

COMING EXAMINATIONS

Delaware: Regular, Dover, December 13-15; Homeopathic, Wilmington, December 13-15. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.

Kentucky: Louisville, December 15-17. Sec., Dr. J. N. McCormack, Bowling Green.

Maryland: 1211 Cathedral St., Baltimore, December 13-16. Sec., Dr. J. McPherson Scott, Hagerstown.

Virginia: Lynchburg, Dec. 20-23. Sec., Dr. R. S. Martin, Stuart.

Iowa Adopts Concentration Method

The State University of Iowa College of Medicine has adopted the concentration method of teaching for the courses of the first two years. It is the Harvard plan modified to a considerable extent. The arrangement of the work and the number of class-room hours per week in each subject are shown in the following schedule:

	—Class-Room Hours per Week—			
	First Year		Second Year	
Subject	1st Sem.	2d Sem.	1st Sem.	2d Sem.
Anatomy, histol. and embryol..	27	19	9	—
Physical and organic chem..	4	2	—	—
Physiologic chemistry	—	—	4	6
Physiology	—	10	8	—
Pharmacy	1	—	—	—
Materia medica	—	2	2	—
Pharmacology	—	—	—	4
Bacteriology	—	—	10	—
Pathology	—	—	—	18
Hygiene and dietetics	—	—	—	4
Physical diagnosis	—	—	—	2
Total class-room hrs. per week	32	33	33	34

Since this method applies only to the freshman class this year, it is too early to make any definite statements, but thus far the results are very satisfactory.

Standard of Preliminary Education in Iowa

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that at a recent meeting the following schedule was adopted, giving the minimum entrance requirements which must be enforced by all colleges after Jan. 1, 1911, in order to be in good standing:

Sec. 1. The college must require of each student a creditable certificate of good moral character, signed by at least two physicians in good standing in the state from which the applicant comes.

Sec. 2. The minimum scholastic attainments to be required of each student for admission to the medical school must be a four-year course in a fully accredited* high school, academy or seminary in which at least two years of foreign language is required, and, in addition thereto, two full years of college work in an accredited college, which shall include at least ten semester-hours† of chemistry, ten of physics (or six, if one year in the subject was done in high school), six of biology, and ten of foreign language. The foreign language taken in college must include enough Latin to make the total Latin taken in high school and college together equal to two years' work in that subject.

Sec. 3. The above requirements are hereby adopted and are in full force and effect on and after January 1, 1911; and thereafter any medical or osteopathic college requiring a lesser standard of qualifications will not be considered in good standing with the Iowa State Board of Medical Examiners.

Oregon July Report

Dr. E. B. McDaniel, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 5-7, 1910. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 106, of whom 58 passed, including 8 osteopaths and 1 non-graduate and 48 failed, including 6 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Denver and Gross College of Medicine	(1909)	77.8
Yale Medical School	(1909)	75
George Washington University	(1904)	75
Rush Medical College (1900) 81.1;	(1907)	85.4
College of Physicians and Surgeons, Chicago	(1905)	76.2
Chicago College of Medicine and Surgery	(1909)	87.9
Hahnemann Medical College and Hospital, Chicago.	(1909)	75
State Univ. of Iowa, Coll. of Med. (1897) 79.8;	(1909)	76.4
Medical School of Maine	(1900)	77.1
Johns Hopkins University	(1910)	84.5, 91.3
Southern Homeopathic Medical College	(1899)	78.2
University of Maryland	(1909)	75.4
Detroit College of Medicine (1896) 85.2;	(1905)	77.7
Univ. of Minnesota, College of Medicine (1902) 81;	(1907)	77.1
Barnes Medical College	(1906)	75.8
Creighton Medical College (1901) 75; (1905) 75;	(1906)	75
Columbia University, College of Phys. and Surgs.	(1904)	80.1
New York University Medical College	(1898)	84.5
Starling Medical College	(1901)	78.4
Cincinnati College of Medicine and Surgery	(1898)	76.9
Medical College of Ohio	(1870)	70.4
Willamette University (1907) 77.6; (1910) 75, 81.4, 82.9.		
University of Oregon (1908) 84.7; (1910) 75.8, 75.8, 76.9, 79.2, 79.6, 80, 86.1, 87.7.		
University of Pittsburg (1908) 75;	(1909)	79.6
Medico-Chirurgical College, Philadelphia	(1904)	83.1
Woman's Medical College of Pennsylvania	(1908)	78.8
Jefferson Medical College	(1908)	79.7
Western University, London, Ontario	(1895)	75
University of Toronto, Canada	(1907)	79.6
McGill University, Quebec	(1906)	86.5
London Hospital, University of London	(1875)	86.8

FAILED

College	Year Grad.	Per Cent.
Gross Medical College (1892) 64.1;	(1901)	70.3
Denver and Gross College of Medicine	(1908)	69.1
Illinois Medical College	(1908)	70.3
College of Physicians and Surgeons, Chicago (1903) 64.8; (1908) 64.7; (1909) 66.3; (1910) 67.6.		
Rush Medical College (1900) 64;	(1903)	69.6
Physio-Medical College of Indiana	(1906)	71.6
Keokuk Medical College	(1895)	53.3
University of Louisville (1903) 62.9; (1905) 50;	(1910)	67, 71.3
Kentucky School of Medicine (1894) 63.9;	(1903)	70
Baltimore Medical College	(1905)	66.8
University of Michigan	(1864)	49.7
University of Nebraska	(1903)	72.1
Barnes Medical College (1893) 58.1;	(1910)	64.1
Washington University, St. Louis	(1910)	70.7
St. Louis College of Physicians and Surgeons	(1909)	48.3
Ohio Medical University	(1904)	41, 72
Eclectic Medical College, Cincinnati	(1906)	60.4
Willamette University (1905) 54.7;	(1909)	54.6
University of Oregon (1908) 69.6, 72.5;	(1910)	71.2, 71.6
University of Pennsylvania	(1908)	71.1
University and Bellevue Hospital Medical College	(1908)	72.5
Memphis Hospital Medical College	(1909)	72.5
Tennessee Medical College (1907) 66.3;	(1908)	65.2
Laval University, Canada	(1904)	54.1
Royal University of Turin, Italy	(1893)	65.7
Facultad de Medicine, Guatemala	(1891)	58.5

The following questions were asked:

CHEMISTRY

1. Define chemistry, including its two principal divisions, and their subdivisions. 2. Name and describe the crystals that may be found in acid urine and in alkaline urine. 3. Differentiate an alkaloid from a glucosid, defining each, and name three of each used in medicine. 4. Write a prescription wherein a chemical reaction resulting in a new end-product is produced, and name the end-product. 5. Write two prescriptions which, if carelessly compounded, would result in explosions, and state what chemical action occurs to produce the explosion in each case. 6. Give a chemical test for arsenic. Name chemical antidote. State how it is prepared. 7. Give a simple test for mineral impurities in drinking water; also for vegetable impurities in drinking water. 8. Define resin. Name five used in medicine.

PHYSIOLOGY

1. In which part of the alimentary tract does the greatest amount of absorption of foods take place? Of water? Is absorption a physical or vital process? 2. State concisely but in detail what happens to proteins, carbohydrates, and fats, after absorption. 3. Give proportion of blood to total body weight. In sudden hemorrhage in a healthy individual, what proportion of blood to the body weight may be lost without proving fatal? 4. What are the principal heat-producing tissues? Mention the circumstances which cause variation in temperature. 5. Where are the following centers: (*a*) respiratory, (*b*) micturition, (*c*) vasomotor, (*d*) visual, (*e*) auditory? 6. What are the important parts of the eye physiologically? 7. Name and specifically state the functions of the tenth cranial nerve. 8. Define diapedesis, hemolysis, osmosis, zymogen, colostrum, cholesterin.

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* By an "accredited" high school, academy or seminary is meant one that has been inspected and fully accredited by the state university of the state in which it is located; or, in other words, a high school, academy or seminary, a diploma from which would admit the holder to the College of Liberal Arts of the University of Iowa without examination. The matriculation examination for entrance on the study of medicine must be conducted by one especially qualified and not by any member of the medical faculty. Any disputes arising as to an accredited school or as to the standard of examination for applicants for matriculation shall be referred for settlement to the Iowa State Inspector of Schools.

† By "semester-hour" is meant a subject taken for one hour a week during one semester. This equals from sixteen to eighteen hours of didactic class-room work or thirty-two to thirty-six or more hours of laboratory work.

HISTOLOGY

1. What is a gland? Name its forms. Of what does the secreting portion of all glands consist? 2. Define and classify epithelial tissue. 3. Of what do ganglia consist? Name kinds of ganglia and state what covers outer surface. 4. State specifically where you find (*a*) Meissner's plexus, (*b*) Auerbach's plexus, (*c*) crypts of Lieberkuhn, (*d*) Bowman's capsule, (*e*) Heller's plexus.

PATHOLOGY

1. Differentiate the blood of pernicious anemia from that of myelogenous leukemia. 2. Give pathology of follicular tonsillitis in detail. 3. Give pathologic changes taking place in chronic myocarditis. 4. Give pathologic anatomy of simple catarrhal broncho pneumonia.

NERVOUS DISEASES

1. Give the etiology and diagnosis of sciatic neuralgia (sciatica). 2. Give the differential diagnosis between hemorrhage into the brain substance and ventricular hemorrhage and meningeal hemorrhage. 3. Give symptoms of bulbar paralysis. 4. Describe in detail the "rest cure" treatment of neurasthenia.

OBSTETRICS

1. What is the difference in measurements between the anteroposterior diameter of the superior strait and the oblique diameter at the same point? 2. (*a*) Describe the process of ovulation. (*b*) What influence, if any, has ovulation on the function of menstruation? What is the source of blood-supply appearing in menstruation? 3. Describe the process of gestation from conception to parturition. 4. What is the cause of pernicious vomiting in pregnancy? Give treatment. 5. Define hourglass contraction of the uterus. (*b*) What is the danger to the mother in this complication? (*c*) Give treatment. 6. (*a*) In case of laceration of the perineum in labor, when and how would you repair it? (*b*) Describe after-treatment. 7. Describe the change taking place in the circulation of the child coincident with birth. 8. Describe your management of a case of ante-partum eclampsia at full term.

DIAGNOSIS

1. Give diagnosis of both acute and chronic appendicitis. 2. Diagnose hepatic colic. 3. Give differential diagnosis of diphtheria and acute follicular tonsillitis. 4. Diagnose acute inflammatory rheumatism. 5. Diagnose cirrhosis or chronic atrophy of the liver. 6. Give diagnosis of cerebrospinal neurasthenia. 7. Diagnosticate diabetes mellitus. 8. Diagnose anterior poliomyelitis.

GYNECOLOGY

1. Give etiology and symptoms of obstructive dysmenorrhea. 2. What are the (non-surgical) methods of replacing a retroverted or retroflexed uterus when fixed by adhesions? 3. What is the treatment—(*a*) prophylactic and (*b*) curative—of chronic metritis? 4. Give symptoms and diagnosis of ectopic gestation. 5. Describe the method and principal points to be noted in performing bimanual examination per vaginum. 6. What are the causes and treatment of pelvic peritonitis? 7. How does gonorrheal vaginitis differ from the simple catarrhal? 8. What are the principal displacements of the uterus? Describe two of them.

PRACTICE OF MEDICINE

1. Differentiate the crepitant rale and the subcrepitant rale, and give the clinical significance of each. 2. Describe the natural heart-sounds. 3. Give the physical signs of pleuritic effusion. 4. What are the physical signs of aortic regurgitation? 5. Give the period of incubation and of eruption of the exanthemata. 6. Give the symptoms and treatment of tetanus. 7. Give the etiology, symptoms and treatment of gastrointestinal catarrh of infancy and childhood. 8. What are the symptoms of acute parenchymatous nephritis?

EYE AND EAR

1. What are the causes of ptosis and the remedial measures employed? 2. What are the pathologic conditions in gonorrheal ophthalmia and give the treatment of gonorrheal ophthalmia? 3. Where should the opening be made in order to reach the antrum in a case of abscess of the middle ear? 4. Give the etiology, diagnosis and treatment of acute otitis media.

SURGERY

1. What arteries, muscles and nerves would be severed in amputation at the middle third of the humerus? 2. Describe the symptoms and give the treatment of hemorrhage from the middle meningeal artery. 3. Name and describe the different varieties of fracture. 4. Describe the several varieties of club-foot. 5. Relate the causes of intestinal obstruction. 6. Describe hypospadias, epispadias, phimosis and paraphimosis. 7. Name the different varieties of benign tumors. 8. What are the causes and the treatment of pelvic peritonitis?

DISEASES OF CHILDREN

1. Describe the symptoms of empyema and give treatment. 2. Describe intussusception and volvulus; give treatment of both conditions. 3. Name the different varieties of stomatitis. 4. Describe chorea and give treatment of chorea minor. 5. Give symptoms of otitis media and treatment of same. 6. Describe the eruption of scarlet fever, measles and syphilis, and give the diagnostic points of each. 7. Write a prescription for a child 5 years old suffering from *tænia solium*. 8. Give symptoms of acute anterior poliomyelitis.

MATERIA MEDICA AND THERAPEUTICS (HOMEOPATHIC)

1. Name three remedies useful in suppurative processes, with indications for the use of each. 2. Name the so-called "twelve tissue remedies." 3. Name the tissue remedies most useful in mental states and affections. 4. Name the tissue remedies most useful in simple fevers. 5. Compare respiratory symptoms of bryonia, phosphorous and antimonium tartaricum. 6. Give the mental symptoms of cannabis indica and ignatia. 7. Cinchona: give its common name; form of preparation used; sphere of action. 8. Arsenicum album: write as much as you can about this drug and its action, using not more than twenty lines, or 100 to 125 words.

MATERIA MEDICA AND THERAPEUTICS

1 Define: (a) materia medica, (b) therapeutics, (c) minimum dose, (d) maximum dose, (e) toxic dose, (f) lethal dose. 2. How much silver nitrate would you use to make 2 ounces of 10 per cent. solution of the same in water and show your mathematical work? 3. How would you diagnose and state briefly how you would treat poisoning by: (a) hydrocyanic acid, (b) arsenic, (c) strychnin, (d) belladonna, (e) carbolic acid? 4. Iodin: (a) give chief source and brief description of same; (b) name five preparations used in medicine, containing iodin free or in combination: (c) name three conditions in which iodid or its salts are indicated. 5. Salol: (a) give official name; (b) give dose; (c) describe briefly its action on the stomach and small intestines. 6. Give the physiologic action of veratrum and aconite and name diseases in which they are useful, stating dose. 7. Name two of the most important remedies used in the treatment of syphilis, the stages in which indicated and give method of administration. 8. Describe the treatment of gonorrhea in the female.

Louisiana October Report

Dr. A. B. Brown, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, October 18-19, 1910. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 31, of whom 11 passed and 20 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Alabama	(1910)	75
University of Louisville	(1910)	78.1, 80.1, 87.8
Tulane University of Louisiana	(1910)	76.9, 79.3, 85.9
Baltimore Medical College	(1907)	80.2
Cornell University Medical College	(1910)	95
University of Nashville	(1910)	75
Memphis Hospital Medical College	(1903	77

FAILED

College	Year Grad.	Per Cent.
University of Alabama	(1902)	63.8
University of Arkansas	(1909)	66.2
University of Louisville	(1910)	55, 60.2
Maryland Medical College	(1910)	54.8
Flint Medical College	(1910)	63.1
Memphis Hospital Medical College	(1901) 66.6; (1907)	60.9; (1910) 59.4, 62.7, 63.6, 63.7, 66.1, 68.5, 68.5.
Chattanooga Medical College	(1909)	61.9
Meharry Medical College	(1909) 66.1, 67.3; (1910)	58.5
Baylor University	(1905)	73.7

Minnesota October Report

Dr. W. S. Fullerton, Secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at Minneapolis, October 4-7, 1910. The number of subjects examined in was ten; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 21, of whom 17 passed and 4 failed. Eleven candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern University Medical School	(1910)	77.8, 79.6
Rush Medical College	(1910)	79.7
Chicago College of Medicine and Surgery	(1910)	82.6
Univ. of Michigan, Coll. of Medicine and Surgery	(1910)	80.8
University of Minnesota, College of Med. and Surg.	(1909)	80.7; (1910) 76.9, 80.8, 82.9.
St. Louis University	(1908)	78.1
Long Island College Hospital	(1899)	85.2
Columbia University, Coll. of Phys. and Surg.	(1910)	88.3
Jefferson Medical College	(1910)	83.8
Hahnemann Medical College of Philadelphia	(1910)	83.3
Marquette University	(1910)	77.7
University of Toronto, Ontario	(1910)	86
University of Marburg, Prussia	(1878)*	

FAILED

College	Year Grad.	Per Cent.
Northwestern University Medical School	(1910)	72.9
Marquette University	(1909) 63.6; (1910)	73.3
Laval University, Quebec	(1910)	68.9

LICENSED THROUGH RECIPROCITY

College.	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1907)	Iowa
Northwestern University Medical School	(2, 1909)	Illinois
Rush Medical College	(1892) Iowa; (1903) (1909)	Illinois
College of Medicine and Surgery, Chicago	(1909)	Illinois
College of Physicians and Surgeons, Baltimore	(1903)	New Jersey
Johns Hopkins University	(1906)	Maryland
Hamline University	(1909)	N. Dakota
Creighton Medical College	(1910)	Nebraska

* No percentage given.

Book Notices

The Practice of Medicine. A Guide to the Nature, Discrimination and Management of Disease. By A. O. J. Kelly, M. D., Assistant Professor of Medicine in the University of Pennsylvania and Assistant Physician to the University Hospital, Philadelphia. Cloth. Price, $4.75 net. Pp. 945, with illustrations. Philadelphia: Lea & Febiger, 1910.

The tremendous changes in our conceptions of pathologic as well as physiologic processes, and consequently in treatment, are reflected in this new book. In the first chapter, on infectious diseases, is condensed in a brief space reference to all the work of the last ten or fifteen years in the blood and secretions—everything from antigens, antibodies and agglutinins, hormones and internal secretions to lysins and the toxins of the zooparasites. The student and the junior practitioner, for whom this work is intended, unless exceptionally well taught and attentive in his college course, and unless conversant with current medical literature, must indeed be bewildered by all this wealth of reference to the "newer pathology," but it illustrates the increasing complexity of medicine.

In looking over the classification of diseases one is impressed with the increased number of and the increased space given to the zooparasitic infections—the protozoan and metazoan infections—by the formidable list of thirty-seven diseases which the author has classified under the head of "Infections of Unknown or Doubtful Etiology," and by the list of twelve "Nervous Diseases of Functional or Unknown Nature." So that with all the advance that has been made, the ground seems merely scratched and the investigator still has an immense and rich field before him for cultivation.

Noteworthy also is the increasing number of diseases or conditions described under new separate heads, or described under new designations, in connection with certain systems. Under diseases of the circulatory system, for instance, we have weak or insufficient heart, overstrained or irritable heart, the infectious febrile heart, the fibroid heart and tumors and parasites of the heart; multiple serositis under diseases of the peritoneum, perinephritis and paranephritis under diseases of the urinary system, etc. And it may be added that there are quite a number of conditions described at length, with a lengthy probable symptomatology, which the author admits can be diagnosed only at autopsy. The discussion of pathologic physiology at the beginning of each new section is a good feature of the book.

The author advocates the tub bath and milk diet in typhoid fever, and says that he has never seen good results from a generous diet. Preventive inoculation in typhoid, he believes, is of doubtful value, and the serum treatment has not commended itself to the profession. The treatment of bacterial infections by bacterins is approved, and pneumonia patients should have open air or at least fresh-air treatment throughout in preference to "canned" oxygen *in extremis*. He calls attention to the revised conception of diphtheria, to the effect that it is often more than an infection by the Klebs-Loeffler bacillus, and calls the microorganism of cholera by the rather unusual designation of *Microspira comma*. Uncinariasis, he states, exists in Florida in 90 per cent. of the population, and in subtropical countries and in Germany, but he says nothing about its prevalence in other parts of the United States. The lavish use of parentheses throughout the text is jarring on the reader, and detracts from an easy, readable style. The foundation of a good, modern work is here, and when it has passed through the refining fire of a revision, it will take its place among the standard works on the practice of medicine.

Clinical Obstetrics. By Robert Jardine, M.D., Edin., Professor of Midwifery in St. Mungo's College, Glasgow. Third Edition. Cloth. Price, $6.50 net. Pp. 716, with 112 illustrations. New York: William Wood & Co., 1910.

Professor Jardine's book differs from most other books on obstetrics in that a considerable part of the space is given to the relation of cases illustrative of nearly every complication of pregnancy, labor and the puerperium. The term "clinical obstetrics" is therefore appropriate. The descriptions of the normal and pathologic conditions are nevertheless clear and fairly complete although sometimes brief while the symptoms, diagnosis and treatment are sufficiently given and make the book a satisfactory text-book for students. In this edition considerable new matter has been added, especially on the subject of neuritis, pyelitis, acute yellow atrophy of the liver, eclampsia, etc., as well as the reports of fifty new cases. There are now thirty-two cases of eclampsia reported, and a number of rare complications. The illustrations are well selected and well made.

This way of writing a book on obstetrics, which is essentially the same as that followed by Smellie, the great pioneer English obstetrician, has distinct advantages. First, it assures the reader that the author knows whereof he speaks. One may know at the beginning that the book is not simply another compilation. Then, the conclusions reached by the writer can be judged, for the material on which they are based is presented with the conclusions. The chief criticism of Jardine's method of presenting his cases is that when a number are reported to illustrate a complication, as in eclampsia, he does not classify the cases and compare them in a brief and clear summary. This makes it difficult for the reader to obtain a comprehensive view of the cases and form a judgment of the results without a considerable amount of work that might have been avoided had the author followed the method of study and comparison that is adopted by the directors of clinics.

Some objections might be raised to certain points in the technic of management and operation. For example, the management of mammary complications is not in accord with the present state of our knowledge of the physiology of the breast and of the way to treat infections. The differentiation between engorgement and infection is not clearly made, and the statement that the temperature will usually be raised a degree or two while the milk is appearing is distinctly a mistake. The application of belladonna, hot fomentations and boric poultices in case a breast becomes hardened and inflamed will favor suppuration that could be avoided by the opposite line of treatment.

The statement that shaving the parts in serious operations is undesirable in private practice gives a doubtful impression of the general aseptic management.

The amount of space given to spinal anesthesia is astonishing; so is the statement that this method of anesthesia is suitable for forceps operation.

The reason for the continued employment of the side position in forceps operation is not understood by us. The results of the induction of premature labor in the six cases given were not very satisfactory, as four of the children were lost. Either the operation should be condemned or the cases should be criticized to show how the result can be improved. The extraperitoneal Cesarean section is not mentioned, while vaginal Cesarean section, with which the author has had no experience, is very briefly described.

The book is a successful attempt to present the conclusions of a teacher of much experience and illustrates the subject with frank unvarnished records of cases that reenforce the teaching and furnish a basis for the conclusions. Such a book cannot be other than a valuable addition to obstetric literature. The work is beautifully printed and illustrated.

Difficult Labor. A Guide to its Management for Students and Practitioners. By G. Ernest Herman, F.R.C.S., Consulting Obstetric Physician to the London Hospital. Cloth. Price, $2.50 net. Pp. 547, with 180 illustrations. New York: William Wood and Co., 1910.

This fifth edition of Herman's popular book on the management of difficult labor has been thoroughly revised and considerably enlarged, new illustrations having been added, together with a chapter on retroversion of the gravid uterus and puerperal eclampsia. The book is characterized by a clear dogmatic style, suitable for a manual designed for the practical use of students and practitioners. The heavy type headings of chapters and paragraphs and the clear arrangement of matter make the book easy to use in reference. It is evidently the work of an experienced teacher who knows what is needed by his readers.

In general the work is in accord with modern American obstetric practice. It would have been desirable, however, to add the metric measurements as many have learned these measurements instead of the English inches One is surprised to find little description of the aseptic technic of operation The use of gloves is not recommended, and the illustration of forceps operation shows bare hands and likewise no protection of the patient The operation is done on the bed with the patient in the side position Greasing the perineum is allowed, although the author doubts that it can help much in preventing lacerations

With these exceptions, the book is eminently practical The author has in mind the needs of the busy practitioner who will not remember too much of his theoretical training but needs clear and definite rules for action If these rules are not all in accord with the most modern trend of practice they represent at least the results of much experience and are perhaps as safe as the more radical methods of procedure that in some clinics have become popular in recent years The book is worthy of the careful study of all

Lehrbuch der Ohrenheilkunde Von Dr Victor Urbantschitsch O O Professor der Ohrenheilkunde an der Wiener Universitat und Vorstand der K K Universitatsklinik für Ohrenkranke Fifth Edition Paper Price 18 marks Pp 623 with 156 illustrations Vienna Urban & Schwarzenberg 1910

This is the fifth edition "completely revised and enlarged," of Urbantschitsch's comprehensive work The author takes up the anatomy and physiology of the organ to be discussed, following this with the clinical side of the subject There are many interesting illustrations throughout the book

In the study of the symptomatology and pathology of the various ear affections the author treats of a number of new matters in more detail than is found in most similar books Despite the fact that Bezold Politzer and others have long ago and repeatedly denied that hearing exercises can be of any value in cases of deafness Urbantschitsch still maintains his faith in them and describes his methods in detail

The Leidler and Schuler method of *x* ray examination of the mastoid is referred to and it would seem that skiagrams are of some assistance in the diagnosis of certain mastoid conditions The details of Bárány's modification of the Rinné test are given With reference to the physiology and pathology of the labyrinth, the author has drawn from and quoted the work done by Bárány and Ruttin Nystagmus is dealt with in detail. Bárány's work on the physiology and pathology of the semicircular canals (1907) is quoted, and one who has previously read but little regarding nystagmus can obtain a very good working knowledge of the condition Quite an interesting section is that dealing with the medicolegal status of injuries to the ear

All in all, the present edition is a very readable, clear, authoritative and valuable production

Insects and Disease A Popular Account of the Way in Which Insects May Spread or Cause Some of Our Common Diseases By Rennie W Doane A B, Assistant Professor of Entomology, Leland Stanford Junior University Cloth Price, $1 50 net Pp 221, with 112 illustrations New York Henry Holt & Co, 1910

This book gives, in untechnical language, an interesting account of the part insects play in the dissemination of disease The relation of house flies to typhoid, of mosquitoes to malaria, yellow fever and elephantiasis, of fleas to plague, of tsetse flies to sleeping sickness, and the suspected relation of insects to several other diseases are explained Some directions are given for destroying or expelling insect pests, and an excellent, though not exhaustive, classified critical bibliography, completes the book

A few typographical errors unfortunately tend to impair the reader's confidence in the carefulness of the proofreading and hence in the accuracy of the spellings used *Musca domestica,* for instance, on page 201 hides behind the alias of *Muca domestica,* M J Rosenau is referred to once as "Roseman" and twice as 'Rosenan," Finley and Ricketts are fellow sufferers

Apparently out of a laudable (but, we believe, mistaken) desire to spare the average reader, the legends for the illustrations which give magnified views contain no indication of the scale of enlargement In the case of the less familiar insects especially it would have been desirable to indicate the scale of magnification and perhaps to give a macroscopic picture by the side of the microscopic to aid in the recognition of the insect.

The Examination of the Function of the Intestines by Means of the Test Diet Its Application in Medical Practice and Its Diagnostic and Therapeutic Value By Dr Adolf Schmidt, Halle A S Authorized Translation from the Second Revised and Enlarged German Edition by Charles D Aaron M D Professor of Diseases of the Stomach and Intestines in the Detroit Post Graduate School of Medicine Price, $1 50 net Cloth Pp 126 with illustrations Philadelphia F A Davis Co, 1909

While not comparable with the examination of stomach contents, the examination of the feces after a test diet gives reasonable hope of greatly advancing our knowledge of functional disorders of the intestines The method of Schmidt has been somewhat simplified since the publication of the first edition, and may now be carried out by any practitioner with a minimum of technical skill and of laboratory equipment This method has stood the test of time, and is destined to outlive its competitors such as the desmoid test, the bead test, etc In the present edition Professor Schmidt has developed more fully the relations of the stomach, liver and pancreas to intestinal diseases and this chapter forms a valuable contribution to a neglected field of gastrointestinal pathology The last chapter, dealing with chronic constipation, presents the author's theory that in constipation digestion is too good and presents the reasons for the agar agar treatment which, unfortunately, has been appropriated by the proprietary interests The book is tastefully bound and well illustrated

Applied Anatomy The Construction of the Human Body Considered in Relation to Its Functions Diseases and Injuries By Gwilym G Davis M D, Associate Professor of Applied Anatomy, University of Pennsylvania Cloth Price $6 Pp 630 with 630 illustrations by E F Faber Philadelphia J B Lippincott Co, 1910

On account of the great mass of facts to be learned, the college course in anatomy is confined almost entirely to the descriptive work of the large anatomies Only meager and superficial attention is given to applied anatomy in the teaching of surgery and physical diagnosis With a fairly good grounding in descriptive anatomy, a year devoted to the study of applied anatomy would give a student an invaluable knowledge of the subject that would prove useful not only in his subsequent study of diagnosis and all the surgical branches, but would give him something that he could apply with immense advantage daily after entering on general practice This book with its numerous splendid illustrations of normal and pathologic anatomy and anatomic relations, and its practical text should prove of great usefulness, to student, general practitioner and surgeon in their daily work

VII Bericht der Deutschen Gesellschaft für Samariter und Rettungswesen fur die Jahre 1908 und 1909 Herausgegeben vom Vorstand Paper Pp 171 Leipzig Nikolaikirchhof

First aid and life saving institutions and societies scarcely have an independent existence in the United States, the combination of such societies into a national association originated in Germany The present volume is the seventh report of the German Association, which is now in the fifteenth year of its active existence It was formerly known as the Deutscher Samariter Bund but with the natural development and expansion of its work, two years ago took the present title The report includes, in addition to the ordinary proceedings of the society, reports on the progress of life saving work in various occupations and localities The articles are illustrated and afford useful hints to those interested in such work An extension of such associations is indicated as affording a preparation for emergencies in which life is liable to be sacrificed because the necessary men and materials for first aid are not at hand

The Diseases of Women A Handbook for Students and Practitioners By J Bland Sutton F R C S Eng, Surg on to the Middlesex Hospital and Arthur E Giles M D B Sc Lond F R C S Edin Suregon to the Chelsea Hospital for Women Cloth Price, $5 25 Pp 554 with 127 illustrations New York Rebman Company 1910

In the latest edition of this well known work on gynecology, the authors have *elaborated certain subjects such as fibrosis* and adenomyoma of the uterus and generally have brought the book up to date The pathologic classification of endometritis has been changed to correspond to the recognized nomenclature, and attention is called to the difficulties of differentiation between appendicitis and pelvic inflammation A description of the technic of Wertheim's operation for carcinoma of the uterus has also been added.

Medicolegal

Liability for Gauze Left in Abdomen in Gonorrheal Suppuration—Custom of Dressing Wounds and Keeping Track of Gauze—Expert Testimony

The Supreme Court of Iowa approves of a judgment in favor of the plaintiff in the malpractice case of Reynolds vs. Smith and another (127 N. W. R., 192). It says that an abdominal operation for the removal of a cyst or tumor was performed on the plaintiff January 16 by Dr. Schooler, a partner of Dr. Smith. Dr. Smith attended the patient until the 19th, when Dr. Schooler, who had been temporarily absent, resumed charge and attended the patient until her return to her home in Minnesota February 23. The wound had not entirely healed, and, on her arrival in Minnesota, a Dr. Schmitt dressed it. On the 27th he made an examination, and, according to his testimony, found a piece of surgeon's gauze about 16 inches square in the abdominal cavity and, after enlarging the opening, removed it. Though the wound then healed the plaintiff continued to be weak and suffered from melancholia for some time and in April of the following year, was operated on by Dr. Schmitt for hernia. This suit was brought to recover damages for that, as was alleged, the defendants were negligent in failing to discover and remove the gauze, subsequently extracted by Dr. Schmitt.

Counsel for the defendants contended that the record as a whole did not show that the defendants failed to exercise the degree of skill and care exacted in such cases. But that both were *eminent in their profession alone could not exonerate* them from the charge of negligence. The most proficient are subject to the *infirmities* of human nature, and, as the books demonstrate, sometimes may lapse below the standard by which their conduct is to be measured. The history of the patient was such as permitted of no relaxation in attention at and after the operation. At an operation five years before Dr. Schooler had removed her ovaries and Fallopian tubes, and at another operation had removed her womb. If she was afflicted with a gonorrheal affection, this may have exacted greater caution, or might have been thought to account for the delay in healing after the operation was performed.

Dr. Schooler testified that two gauze pads were left in the patient and Dr. Smith that he removed those pieces three days later. It was the habit of Dr. Schooler to knot the second piece of gauze inserted and Dr. Smith found one of those removed in that condition. He then inserted another piece of gauze several yards long to prevent bleeding and to act as a drain, leaving the end protruding through the wound. On Dr. Schooler's return on the second day thereafter he resumed charge and inserted a drainage tube and was of opinion that had there been gauze in the body he would have discovered it. Before the patient left for home he testified to having again examined her without discovering anything abnormal save the continued suppuration.

On the other hand, Mrs. Reynolds related that Dr. Smith removed some of the gauze on Thursday, after the operation had been performed on the Monday previous, cutting it off with scissors, and some more in the same way on the following day, and that she did not remember that any more had been inserted. Her husband's testimony was corroborative, and to the effect that Dr. Smith removed the last of the gauze on Sunday.

It will be noted that none of the witnesses pretended to account for the gauze inserted by Dr. Smith after removing the pads put in by Dr. Schooler, but it appeared to have been several times longer than that extracted by Dr. Smith. Of course neither of the defendants intentionally allowed any foreign substance to remain in the abdomen. No one so claimed. But the jury might have found that the gauze was taken therefrom as testified by Dr. Schmitt, that it should have been removed within a few days after the operation, that the failure of the wound to heal indicated an abnormal condition, and that, even though the patient had suffered from specific infection, this exacted careful examination as to the cause, and that all this being so, the issue as to whether had the defendants exercised that degree of skill and care required of them, the gauze would have been discovered and removed before the plaintiff left the hospital, was for the jury to determine.

The defendants requested several instructions to the effect that all exacted of them was that they follow the custom *and usages of physicians in the performing of such operations* in the vicinity where they practiced. These were rightly refused, for no evidence was adduced that any particular custom or usage in the matter of avoiding leaving the gauze in the plaintiff was actually followed. Moreover, if there had been such evidence, those instructions ought not to have been given, for, in view of the failure of the wound to heal, the continuance of suppuration, together with the significance of leaving such a substance in the body, the issue of negligence must have been submitted to the jury.

The evidence disclosed that nurses and the intern sometimes dressed the wound. They were not employees or agents of the defendants, and, unless the defendants were negligent in permitting this to be done by them, they were not responsible for their acts save in so far as their duty exacted examination of the wound and proper treatment. Had there been evidence tending to show that from the acts or omissions of the nurses and intern a gauze became lost and was allowed to remain in the plaintiff's abdomen the jury must have been instructed as above, but, in the absence of such evidence and especially in view of explicit instructions as to the necessity of an affirmative finding of negligence on the part of the defendants, there was no error in refusing to give an instruction of the character requested.

The intern was asked to explain the practice which obtained at the hospital in determining whether all gauze pads used in operations were accounted for. An objection to the inquiry was sustained. The ruling was correct, for there was no evidence that any precaution had been taken in operating on the plaintiff save by tying a knot in the second piece of gauze inserted. True Dr. Schooler testified that "we have a way or *method* by which to keep track of the various pieces put in there * * * The nurses count the pieces of gauze pads that are used." But the record did not indicate whether such way or method was followed in *performing the operation* on the plaintiff. Had there been evidence of how track of the gauze was actually kept, doubtless, as bearing on the issue of negligence, testimony that this was in accord with custom would have been competent. In the absence of such evidence, the rule is otherwise.

The jury were instructed, in part: "Though it is with a view of aiding you in determining the questions submitted to you that expert testimony has been admitted, you should bear in mind that the opinions of experts may be correct or incorrect, and that such testimony, depending on whether it tends to reveal the truth or otherwise, may or may not aid you in arriving at a correct conclusion, and that on you rests the responsibility of a true verdict. The expert testimony should be weighed and considered by you as you weigh and consider the other testimony, and taking into consideration the amount of skill and knowledge possessed by the witnesses giving expert testimony, the matters testified to by them, the other evidence and facts and circumstances of the case, you should give to expert testimony such weight and credit, and only such weight and credit, as you deem it justly entitled to receive. It is your duty to give to the evidence, and all of the evidence in this case, full and fair consideration and draw therefrom the conclusion which your judgment and consciences approve as just and right. When expert witnesses testify to matter of fact, from personal knowledge, their testimony, as to facts within their personal knowledge, should be considered the same as that of any other witnesses who testify from personal knowledge." The court does not think the instruction, when fairly construed, disparaged expert testimony or indicated that it might be rejected because such was its import. Like other testimony, it must reveal the truth in order to be of aid to the jury. That it may or may not be correct is also true. The manifest design of the instruction was to caution the jury against blindly accepting what experts on either side had said, as is often likely to be done, owing to the expert's knowledge and the jury's ignorance of the subject of inquiry, and to emphasize their duty to apply the same rules in weighing and testing expert as is applied to other testimony. The instruction is not open for fair criticism.

The jury allowed damages in the sum of $2,000, but the court thinks that excessive when it is considered that the operation was performed January 16 and that the gauze, which might properly have been allowed to remain for about a week, was removed February 27. The circumstance that the wound healed within a few days thereafter tended strongly to show that the consequences were not serious. That the patient recovered immediately after the operation for hernia in April of the following year tended to prove that the suffering from melancholia, headache, and insomnia were due to the hernia, rather than to other conditions produced by leaving the gauze pad in the abdomen. Dr. Schmitt thought the hernia due to the last-mentioned cause, but it was exceedingly doubtful as to the record warranting such inference. Wherefore, a remission of $800 from the judgment is made the condition for its affirmance.

Society Proceedings

COMING MEETINGS

Southern Surg. and Gyn. Assn., Nashville, Dec. 13-15.
Western Surg. and Gyn. Assn., Chicago, Dec. 19-20.

AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY

First Annual Meeting, held in Baltimore, Nov. 9-11, 1910

The President, DR. J. H. MASON KNOX, JR., in the Chair

A summary of this meeting was given, with the election of officers, in THE JOURNAL, November 26, page 1903, and one of the reports was summarized and discussed December 3, page 1999.

The Duty of a Nation to Its Potential Citizens

DR. J. H. MASON KNOX, JR., Baltimore: One baby out of every five born dies before it is a year old. It is conservatively estimated that at least one-half of this infantile death rate is a toll paid to parental ignorance and indifference and can largely be averted. The best means of prevention is through an educational campaign, with the mother as the pivotal point. Among matters of fundamental importance are the prompt and accurate registration of births; maternal nursing, and the extension of the educational curricula in the high and normal schools to include better preparation for motherhood. This organization was formed as the result of a conference called by the American Academy of Medicine at Yale University, November, 1909. Permanent headquarters were opened in the Medical and Chirurgical Faculty Building, Baltimore, Jan. 1, 1910; 500 active members have been enrolled. Thirty-two states, the District of Columbia and Canada are represented. Thirty-three organizations, including nurses associations, milk dispensaries, child-helping societies, social settlements, health departments, etc., have become affiliated. The work of the year was devoted principally to educational propaganda. More than 8,000 pieces of mail were sent out from headquarters, and 22,000 circulars and leaflets were distributed. The headquarters have served also as a clearing house for information on matters pertaining to the reduction of infant mortality, and have brought many activities in various parts of the country in touch with each other.

M. JUSSERAND, the French Ambassador, described some of the preventive undertakings carried on in France, which have served as models for those in other lands, especially the Consultations for Nurslings established by Professor Budin. Twenty years ago, when the first of these was founded, a man of 90 had a better chance to live one week than a child one day old. Dr. Budin especially taught that thing which is so obvious, which like so many obvious things, had been lost sight of, for when a thing is obvious no one deems it worth while to think of and it soon becomes forgotten and has to be discovered again. The great discovery was that children are meant to be nursed by their mothers; that the best cow's milk cannot compare with the mother's milk. Nevertheless, there are cases in which recourse has to be had to cow's milk and mothers are taught what sort of sterilized milk they should employ. Along that line many children are saved. This invention is really a very simple one, but it has had such an effect that it is imitated throughout the country. Restaurants have been established at which food is provided free of cost to nursing mothers. Another feature of the French campaign against infant mortality is the teaching of hygiene in the elementary schools. An appropriate motto for the American Association for Study and Prevention of Infant Mortality is the three words: "Learn. Teach. Live."

PROF. IRVING FISHER, New Haven, Conn.: Evidences of the fact that interest in the problem of conserving our national vitality is greater to-day than ever before, are: the campaign against tuberculosis, the study of the pollution of streams, the campaign against the social evil, and finally the campaign directed toward the reduction of infant mortality. The latter has, perhaps, a wider popular appeal than any other. It is beginning, also, to appeal to the statesman and to some extent to the ordinary politician. Carefully gathered statistics which are published in the report to the government on national vitality, show that at least 125,000 of the 300,000 deaths among infants, which occur annually, could be prevented, if modern hygiene were universally practiced. No one who could realize the immense number of needless deaths, would need further argument as to the importance of this movement for the study and prevention of infant mortality. But the public, on the whole is apathetic and needs to be aroused. The assertion has been made in some quarters that effort directed toward the prevention of infant mortality interferes with the operation of the law of natural selection, that the results of such effort would be to prolong the lives of the weak, to increase the miseries of the poor and to reduce the average vitality of the next generation. A careful study of the situation shows that the argument is fallacious, that instead of interfering with natural selection the movement aims to remove the interferences with natural selection which modern civilization has created. It is not a feature of natural selection that babies' milk should be adulterated or contaminated with germs. The movement for the prevention of infant mortality amounts in the end simply to this—to give back to the baby what is the baby's natural birthright, namely, pure milk and pure air. The elimination of disease acts both directly and indirectly toward the improvement in health and vitality not only of the present but of the succeeding generations. Instead of going back to primitive conditions we ought to go forward. The cure for the evils of civilization is more civilization. In accordance with what seems to be biologic law, a lowered birth rate accompanied by a reduced death rate characterize the progress of animal organisms. Applied to mankind, the process makes for economy; the birth of a human being becomes a more important event; and it makes for the conservation of the life that is born. The conservation of infant lives is but part of the problem of the conservation of all human life. While more has been done by governments in other countries toward the conservation of national vitality than in our own land, the movement directed toward the establishment of a federal department of health has made steady progress. It has the endorsement of the President of the United States; of a number of far-sighted and patriotic congressmen, as well as of a large number of the medical and hygienic organizations of the United States. Opposition to the movement comes from special interests actuated by commercial motives. It remains for the people of the United States to say whether the commercial interests of those who produce the food for babies are to be put above the valuation of the babies themselves. And if the department of health, when established, shall have had the effect of restricting the freedom of those who would like to put into the stomachs of babies what is bad for the babies, it will have had for one of its results the reduction of infant mortality.

DR. ABRAHAM JACOBI, New York: The highest infant mortality occurs during the first few weeks of life; inheritance is a powerful factor in the formation and the health of the baby; the diseases and frailties of the parents will be reproduced, actually or potentially, in the offspring Parents with hysteria or epilepsy or other nervous diseases with diabetes, alcoholism, criminal instincts or other forms of insanity, insure dispositions to kindred, if not the same affections Syphilis is fatal to the embryo or fetus, dangerous to the baby, who frequently succumbs to its ravages within a few days or weeks Tuberculosis in the mother will only predispose the baby, open tuberculosis will directly infect the nursling—it may be, the first day or week So individual caution of the present generation will or may and must, safeguard the existence of the child that is to be Marriages are not permitted between the immature even now, they should be prohibited among the advanced tuberculous, the insane, the incurable epileptic the hopeless criminal

Our young doctors, unless they have had the great luck of being taught in obstetric wards and practice, learn, if at all, at the expense of the women who bear children and of the infants that are borne by them Our medical schools do not begin to convey adequate obstetric knowledge and practice to the students The number of poor who suffer for want of the safety vouchsafed by knowledge and by means, increases every year Only a part of the deaths due to puerperal fever are attributed to it other causes such as acute Bright's disease, peritonitis pneumonia being inscribed on the death certificates Puerperal fever is avoidable, its occurrence is a scandal and a shame in the community—like small pox or typhoid fever, and no actual precaution is taken to avoid it Poor agricultural Prussia had its well informed and trained and supervised midwives a century ago There was and is no village in that country without one We, however, have none that compare with them We cling to our prejudices and our indolence Forty years ago the midwife question was discussed in a large New York medical society One per cent of the members present voted for instructing, and licensing and supervising them And this very day the system under which they practice is slovenly and shiftless, no instruction is held out, no examination is held and the infant mortality of all classes, which you are bound to combat, is increased

Dr William H Welch, Baltimore I believe this movement initiates one of the most important campaigns in preventive medicine in this country In spite of the triteness of statistics it is enough to arrest one's attention when one learns that in the state of Maryland over one fifth of all the deaths of all ages occur under one year of age, that one third of all the deaths occur under five years of age, the negro death rate making the percentage higher than in some other places In the registration area of the country, the deaths under one year of age are a little less than one fifth of all deaths of all ages, and about one third under five years of age One ninth of all the deaths occur in the first three months of life The crusade directed toward the prevention of infant mortality will yield the quickest results if waged against the so called diarrheal and intestinal disorders, the acute respiratory diseases bronchitis and pneumonia and the infections Nurslings are better protected against infections than children who are artificially fed

One of the most important functions of the association is the enlightenment of the public Such education of the public is required to secure the enactment of the necessary laws from the legislatures and the appropriation of the funds needed to carry out preventive measures Another function should be to stimulate better sanitary organization and administration throughout the country With this end in view it should lend its whole force toward the organization of a national department of health and should stand for a strengthening of the activities of the federal government in public health work A bureau of child hygiene would be an essential feature of such a federal department of health A campaign in the interest of the better registration of births, the correlation of existing agencies now acting separately for the reduction of infant mortality, the stimulation of investigation, the formulation of a definite program of prevention, are also among the functions of the association The direct benefits to be derived from the application of such measures would of course justify all efforts The indirect benefits would be equally great

(To be continued)

TRI STATE MEDICAL ASSOCIATION OF MISSISSIPPI, ARKANSAS AND TENNESSEE

Twenty Seventh Annual Meeting, held at Memphis, Tenn, Nov 15-17, 1910

(Concluded from page 2068)

Diagnosis and Treatment of Kidney Calculi

Dr W S Anderson, Memphis The Roentgen ray as a means of diagnosis marks the most important advance made in kidney and ureteral stone surgery in *modern times* The clinical picture of a renal calculus often resembles very closely that observed in other pelvic and abdominal troubles. A careful study of the urine is of the greatest importance in cases of suspected stones Among some of the commoner conditions liable to be mistaken for stones are (1) tumors and tuberculosis of the kidney, ureter and bladder, (2) acute or chronic appendicitis, (3) movable or floating kidney, with kinking of the ureter, (4) pain on the right side caused by biliary and pancreatic calculi and intestinal obstruction; (5) psoas or perinephritic abscess

If the kidney is found much diseased it is best to remove it at the time of the first operation rather than to attempt it later for this is usually a difficult as well as a dangerous operation on account of many adhesions

DISCUSSION

Dr E M Holder Memphis By means of the Roentgen ray with modern focusing devices one is able to get a clean-cut, clear, precise, well defined picture of stone in the kidney or bladder It is easier to take an *x* ray of the kidney than of the bladder, for the reason that it is not surrounded by a bony wall

Dr Frank D Smythe, Memphis· One condition has prevented me from making a correct diagnosis of stone in the kidney, and that is acute torsion of the pedicle of an ovarian cyst A physician treated a case for days and regarded it as one of stone in the kidney Examination of the urine revealed a stone in the kidney or ureter, and I was called to perform the operation I regarded it as a case of peritonitis due to rupture of some organ producing infection and advised immediate operation On making an opening I found an ovarian cyst as large as a fetal head, with two or two and a half twists in the pedicle, with rupture of the blood vessels, the cyst undergoing gangrene.

Pistol-Shot Wound Through the Head

Dr Joseph T Seymour, Whiteville, Tenn. The patient was a boy, 15 years of age, who accidentally shot himself through the head while examining a pistol The ball entered the head on the right side near the external angular process of the frontal bone, just above the supra orbital ridge passing through the skull and brain on a straight line making its exit at the junction of the parietal, occipital and mastoid portions of the temporal bone The opening at the point of exit was about the size of a nickel, being much larger than that at the point of entrance Free drainage was established and the patient made a good recovery

DISCUSSION

Dr J W Barksdale, Winona, Miss Six or seven years ago, a man was shot with a 44 caliber Smith and Wesson pistol The bullet passed through the right eye and through the entire thickness of the frontal lobe of the brain, emerging just anterior to the outer central fissure I saw the man three minutes after the reception of the injury There was no loss of consciousness, no paralysis, there was never any symptom suggestive of brain injury during the entire time, other than the physical fact of the injury After recovery, which was uneventful, the patient had several convulsive seizures in the succeeding two or three years, dying four years later of tuberculosis

Dr J R Nelson, Whiteville, Tenn· One singular feature in connection with the case reported by Dr Seymour is that the boy was rational all the time

Dr John Darrington, Yazoo City Miss It is the general practitioner who is called on to treat cases similar to the one reported. Dr. Seymour's patient would have recovered without any complication whatever, except that the external opening was not sufficiently large in the first place to allow free drainage, but had to be enlarged later. It is remarkable how much traumatism the brain can stand. I saw a case in which the skull was crushed over an area an inch and a half in diameter, with pressure on the brain. The pressure was relieved, and the man recovered.

Dr. J. N. Murray, Ripley, Miss.: A negro was kicked on the side of the head by a mule. Two or three tablespoonfuls of brain substance escaped. The boy had had epileptic convulsions previous to the injury. I trephined, removing a spicule of bone from the inner table an inch and a half long. The boy recovered from the operation and has not had an epileptic convulsion since.

Benign Tumors of the Uterus

Dr. E. M. Holder, Memphis: It is conservatively estimated that over two-thirds of women having fibroid tumors of the uterus will die if not subjected to operation. The mortality of myomectomy and hysterectomy is between 2 and 10 per cent., depending on the gravity of the case, on the operator, and on the environment in which the operation is done. It seems a fair conclusion that the resort to early operation will effect a saving of 25 to 30 per cent. in mortality. The rule of practice should be to remove all fibroids which come under observation, unless there seems to be some good reason for temporizing, due either to the small size of the tumor, or to the advanced age or poor general health of the patient. Whenever the disease causes displacement, hemorrhage, pain or pressure sufficient to threaten damage to the general health, to the nervous system, or to the pelvic organs, an operation should be advised. When pregnancy is found to be complicated by a fibroid tumor, it is best to allow pregnancy to go to term as long as the mother's health is not seriously in danger. If, at the onset of labor, or shortly before, it seems certain that the tumor will cause obstruction to the birth of the child, Cesarean section, possibly followed by hysterectomy, should be performed. In cases in which the death of the child makes it necessary to interfere in the earlier months, abdominal section should be performed and an attempt made to enucleate the tumor. If under these circumstances myomectomy is found to be dangerous, hysterectomy should be performed.

DISCUSSION

Dr. William Krauss, Memphis: The terms "benign" and "malignant" are entirely clinical conceptions. They do not carry with them any distinct line of demarcation with reference to the histology or histogenesis of the neoplasm. Sometimes it is extremely difficult for the laboratory man to decide whether a given histologic structure is compatible with a benign clinical course, or whether it is going to mean that the course will be seriously malignant. What are the data for clinical malignancy? The tumor must show evidences of a tendency to spread into the surrounding tissues. There must be a tendency to local recurrence. There must be a tendency to metastasis. It must produce cachexia. These tumors are said to undergo sarcomatous or carcinomatous degeneration. The pathologist knows of no such degeneration. A fibroid tumor being mesoblastic, it can only undergo metablastic changes. It is not a degeneration.

Dr. Frank D. Smythe, Memphis: As the result of my observation and study of hundreds of cases of fibroid tumor I cannot regard a fibroid tumor or myoma of the uterus as a simple tumor. The location of a fibroid tumor rather than the size is the one thing that demands immediate operation. These tumors are of slow growth, but they grow steadily, and in the long-standing cases they are likely to produce serious remote disturbances. There should be little or no mortality attending the operation for the removal of fibroid tumors in the hands of good surgeons. The unavoidable deaths which occur in those cases following operation are always in patients who have had these tumors for a long time, whether they be large or not. Our object is to do the best we can for the patient, and from my own experience I believe the interests of the patient are best served in the main by hysterectomy, and hystero-salpingo-oöphorectomy when the tubes and ovaries are implicated, and these organs are implicated in 50 per cent. of the cases.

Dr. W. T. Black, Memphis: In a woman approaching the menopause hysterectomy should be done in the class of cases under discussion because in 4 per cent. of the cases these tumors undergo malignancy. In a woman already pregnant myomectomy is indicated.

Prevention of Infantile Diarrhea

Dr. A. G. Jacobs, Memphis: The prevention of diarrhea in babies depends on three factors: 1. Proper care should be taken of mother's milk. 2. If this fails, a wet-nurse should be procured. 3. If human milk cannot be secured, properly modified, pure uncontaminated cow's milk should be given. If this method of proceeding is followed, the death-rate from infantile diarrhea will dwindle down to one-fifth of its present proportions.

DISCUSSION

Dr. William Krauss, Memphis: If we are informed as to the methods of keeping the mother up to standard and supplying the infant, the problem is solved without going any further. It is not only a question of getting pure cow's milk as a substitute. The recognition of the proper proportion of the approximate principles in the milk is only one part of the problem. One-half of the protein of mothers' milk is in the form of a soluble albumin. The cow's protein is nearly all casein. This soluble albumin further has the advantage of having been prepared by the mother for emergencies further than the mere preservation of nutrition. Commercial milk, the best that is obtainable, produced in as clean a way as possible, and delivered within three hours, after being obtained under the most favorable circumstances, will contain probably fifty thousand bacteria per cubic centimeter. Grocery milk contains about ten times as many bacteria, and that is what we feed babies. Unless provision can be made whereby milk is delivered at the house containing a minimum number of bacteria, we are bound to have a high mortality among infants in the summer months, aside from the failure to protect the infant against the accidents which may occur in the household from disease and against which it would be protected by the normal protective bodies present in the mother's milk.

Treatment of Acute Middle-Ear Suppuration

Dr. W. L. Simpson, Memphis: Early free antiseptic opening of the drum is to be recommended in acute middle-ear suppuration. If adenoids are present, do not wait until the suppuration has become chronic, hearing bad, etc., before their removal, but operate as soon as diagnosticated. The mastoid operation in acute middle-ear suppuration is not to be a life-saving procedure, but should be done early to save hearing, prevent chronic suppuration, brain or labyrinthine complications, etc.

DISCUSSION

Dr. Eugene Rosamond, Memphis: I would like to emphasize the importance of the general practitioner being equipped so as to be able to do paracentesis of the drum membrane in acute suppuration of the middle-ear. There is no excuse for a doctor not having a head-mirror, with a set of speculums. With an ordinary electric light, even with the bright light of a window in the daytime, with a good head-mirror, there is no trouble in seeing the ear-drum, if we are patient and careful enough and take time enough to cleanse the canal.

Dr. W. S. Anderson, Memphis: I wish to emphasize the advantage of paracentesis of the drum membrane in cases of acute suppuration of the middle ear.

Dr. B. L. Branch, Collierville, Tenn.: I use an ordinary pipette instead of an ear syringe, for the purpose of cleansing the ear, as one can control the force which is used in throwing the water into the ear to greater advantage than with the ordinary ear syringe, and it does not cause any pain.

Buboes and Their Treatment

Dr. George R. Livermore, Memphis: I prefer the Hayden operation for the relief of buboes. A man had had several incisions made on either side, was confined to bed for months with suppurating inguinal adenitis, and yet following the Hayden operation he was able to be up in a week or ten days, the result being very gratifying.

DISCUSSION

Dr. William Krauss, Memphis: A patient with bubo had been under the care of a number of specialists without relief. The patient had induration and softening of the skin over the bubo with a little reddening, and from time to time it became very painful. I thought it would be a good case for vaccine treatment. The patient received five injections of the combined vaccines, and he is now entirely well. It took this man just two weeks to get over a condition that had lasted for eight years.

Plaster of Paris as a Primary Dressing for Fractures

Dr. J. W. Barksdale, Winona, Miss.: In using plaster as a primary dressing, a strip of ordinary bandage should be laid lengthwise along the limb, preferably along the front, between the padding and the plaster. Before hardening is complete, the plaster should be cut completely through over its entire length, this being rendered easy of accomplishment by cutting down on the roller bandage, which is pulled up into the cut plaster, thereby facilitating the maneuver. After being cut the roller bandage should be run firmly around the limb so as to keep the plaster snug and prevent splitting. The ends of the fingers and toes should be left exposed so as to permit of frequent inspection and should the swelling create discomfort, or threaten gangrene, the roller is to be taken off and the plaster sprung so as to accommodate the increased bulk. As the swelling subsides the bandage can be drawn as tightly as desired, so that the enveloping material at all times keeps up an even pressure and secures coaptation. If the use of this material as a primary dressing has a drawback, I have thus far failed to discover it.

DISCUSSION

Dr. John L. Jelks, Memphis: When I put a plaster of Paris bandage as a primary dressing on a limb that has been fractured, I am very anxious about that case after the first day or until I cut the bandage and inspect the limb. Plaster of Paris can be adjusted to the contour of the limb better than any other splint we employ.

Dr. Battle Malone, Memphis: The best results I have obtained is in cases in which the plaster splint has been put on at the earliest possible time after the accident. I do not agree to the use of plaster of Paris in fractures of the upper extremity. In fractures about the elbow joint it is essential that we should have a dressing that can be removed, and the dressing should be put on in such a way that we can use passive motion, beginning it early, and keeping it up every day with massage.

Treatment of Failing Compensation in Cardiovascular Disease

Dr. Bryce W. Fontaine, Memphis: To relieve the distressing symptoms we must decrease the work of the heart and increase its strength and restore to proper working order its functions. There is no single measure so important in the treatment of some patients as a temporary venesection. The presence of hydrothorax must never be overlooked. Paracentesis in this condition will give immediate relief. The specific effect of digitalis in the stimulation and restoration of tone to the heart muscle has yet to be approached by any other drug. Its action is remarkable in that it stimulates specifically several different functions of the heart muscle. It is indicated in every case of failing compensation, except, perhaps, a few cases of extreme mitral stenosis, and in cases of marked arteriosclerosis. It should be given in doses of one grain, every two hours, until its physiologic effect is noted, then discontinued and resumed in five to seven days, if dyspnea and edema are not diminished. In cases due to arteriosclerosis, and accompanied with high blood pressure, vasodilators are necessary, and are often very efficiently used in conjunction with heart stimulants. Carefully regulated exercises and carbonated baths aid in the peripheral circulation and markedly increase the tone of the heart muscle. In our efforts to reduce the anasarca and to relieve dyspnea, we must not forget the beneficial effect of restful sleep.

DISCUSSION

Dr. Frank A. Jones, Memphis: With reference to the treatment of renal, cardiac, or cardiorenal lesions, the time has come when we are not so prone to administer too large quantities of digitalis and the large doses of salines as we formerly were, but I have come to realize in my individual work that we have no better agent than the Nauheim baths. The Nauheim bath can be improvised in any home where there is a bath tub. As to the use of digitalis, there is but one valve lesion on which it has any marked effect, and that is mitral insufficiency, when failing compensation takes place.

A Form of Primary Nasal Diphtheria

Dr. E. C. Ellett, Memphis: In twelve years I have seen about two cases a year. The cases have all occurred in children, from 4 to 10 years of age. The children were not apparently sick, and were thought to be suffering from a cold. There is no elevation of temperature, no glandular involvement. Nosebleed is frequent from detachment of the membrane by blowing and picking, and excoriations of the upper lip and nostril are the rule. Inspection of the nostril shows a membrane, adherent to the septum most often and completely stopping the nose. At times the attempt to dislodge this will cause bleeding. It looks like a plug of muco-pus, but can be made out to be a membrane attached to the mucous membrane of the nose. Culture shows the characteristic bacilli. The treatment by antitoxin, even at the end of two or three weeks, is very effective. All my patients have recovered and in no case has any postdiphtheritic paralysis occurred. If antitoxin is given at once in suspicious cases the patient is well before the culture can be made, and I think that we should follow this plan and not wait.

DISCUSSION

Dr. Richmond McKinney, Memphis: I should like to emphasize the fact that this disease is mildly contagious. I have seen two or three of these cases a year. In no case did the disease extend to the fauces. One patient with a malignant type was cured in forty-eight hours after the use of antitoxin. In this case we obtained pure cultures of the Klebs-Loeffler bacillus.

Dr. William Krauss, Memphis: Because the little patient is not very ill the condition is overlooked, but as soon as the organisms are transplanted into another soil, they may give rise to more virulent diphtheria and an outbreak in the family.

Dr. W. L. Simpson, Memphis: The cases of diphtheria of the nose I have seen have tallied with the description given. The patient's nose is stopped up either on one side or both, and there is usually some bleeding from the nose although the child is up and around the house and able to play. I think smaller doses of antitoxin than those usually given in the ordinary case of diphtheria of the throat would be followed by equally as good results as the larger doses.

Dr. W. F. Clary, Memphis: The first case of purely nasal diphtheria I ever saw was about four years ago. I investigated that case very carefully and had cultures made immediately, which showed the Klebs-Loeffler bacillus, and the use of antitoxin cleared up the case in twenty-four or forty-eight hours. In this case I noticed a free, ichorous discharge and excoriation of the upper lip. Since then I have seen about one case a year.

The following papers were also read: "The Trials and Tribulations of Skin-Grafting," Dr. R. F. Mason, Memphis; "Gall-Stones with the Complication of Pancreatitis," Dr. W. F. Clary, Memphis; "Report of a Case of Typhoid Fever with Cholecystitis and Cholangeitis," Dr. John O. Gurney, Tupelo, Miss.; "Treatment of Typhoid," Dr. M. S. Pollard, Thornton, Miss.; "Was Hysterectomy Indicated?" Drs. W. D. Ray and S. A. Brevard, Memphis; "A Case Having Symptoms of Abscess of the Temporal Lobe of the Brain," Dr. J. R. Nelson, Whiteville, Tenn.; "The Doctor's Privilege and His Justification," Dr. W. L. Howard, Greenville, Miss.; "Aneurisms of Abdominal Aorta," Dr. W. T. Price, Memphis.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Regular Meeting, Held Nov. 2, 1910

The President, Dr. George E. de Schweinitz, in the Chair

Nervous Disturbances Following Surgical Operations and Anesthesias

Dr. S. Weir Mitchell: In a case of grave hysteria following operation we must consider the patient as a loaded gun, and that the surgeon merely pulls the trigger. The proper man might know that the gun is loaded. This raises the question whether it is not desirable in many cases to prepare the patient for the operation more often than our surgical brothers seem to think is needed. Not only the risks of death are to be considered but the possibility of increasing a preceding condition of disease. Many physicians have felt that there is necessity for more strictly dealing with the before and after of surgical cases. Sir James Paget never did a grave operation on the bladder without putting the patient under a fort night of milk treatment. I am tempted to say that no operation ought to be done without obedience to the rule in St. Bartholomew's Hospital in London, that no surgeon should ever dare to operate on a patient except after consultation with two physicians.

Postoperative Psychoses

Dr. James G. Mumford, Boston: The frequency of postoperative psychoses is shown by the careful study of cases seven and nine years after operation taken from consecutive reports in hospital records. Long-continued mental and psychic disturbances following operations are due to demonstrable microscopic changes in certain nerve cells of the brain.

The Diagnosis of the Postoperative Psychoses

Dr. J. Chalmers DaCosta: All sorts of mental disturbances may follow a surgical operation. It is certain that genuine insanity may arise after an operation, though it is rare. Postoperative insanity is more common in women than in men and less common in children than in adults. Contributory causes are pain, insomnia and shock. In all cases of postoperative insanity there is predisposition, hereditary or acquired. A normal, stable brain will probably never go insane after operation unless that operation attack the brain, testicles, or ovaries. The anesthetic is usually the exciting cause in insanity coming on immediately after the operation. The commonest type of postoperative insanity is confusional insanity. Fear and worry are two important causal factors. Anteoperation fear may become a postoperative phobia, yet, I do not believe that fear or sudden fright is usually responsible for postoperative insanity. Most people go to the operating room with reasonable calmness, many with heroic courage, and some with satisfaction at the prospect. Delirium may be mistaken for insanity, and is far more common, from intoxication or infection, than organic brain disease. The entire subject of postoperative psychoses is one of extreme interest and importance.

Postoperative Insanities

Dr. Edward N. Brush, Towson, Md.: It may be assumed that there is no such thing as postoperative insanity *per se*. Insanity follows operations sometimes but it manifests itself in various forms. The personal and family history in a given case are so difficult to obtain that we are not at all sure how far mental instability plays a part. This naturally arises from the lack of clinical experience in psychiatry on the part of many observers of these cases. Quite a large proportion of postoperative insanities are due to sepsis not necessarily from faulty technic on the part of the surgeon. I have knowledge of a woman of unstable mental equilibrium who became insane after the administration of gas for the extraction of teeth and who remained insane for several months. Before we can study intelligently postoperative mental disturbances we must have the histories of our patients carefully recorded. From the lack of this knowledge the postoperative insanity is often erroneously attributed to the operation when in reality the condition may have been present preceding operation.

DISCUSSION

Dr. Howard A. Kelly, Baltimore: Postoperative psychoses I believe are due to the mental shock of the operation *per se* and not necessarily to any particular kind of operation. The duration and severity of the procedure are minor factors. The condition is due rather to the attitude of intense expectancy, even of dread, inspired by a new and untried force with which the patient feels she has to cope. It is important that the physician should be able to inspire the patient with confidence sufficiently to enable her to feel that he is a moral support. The conditions after operation should be as natural as possible and the patient should be out in the sunlight upon the porch when practicable. Treatment should be prophylactic in determining the predisposing factors. The utmost care should be taken to minimize the unpleasantness of the operation.

Dr. Edward Martin: I think every surgeon feels that when Dr. Mitchell said "the surgeon pulled the trigger" he practically covered the whole subject. We do not recognize that a perfectly healthy individual in good mental health can be made insane by any form of surgical intervention practiced at the present day. We do recognize certain postoperative mental disturbances as rather common. We see the type of depression which we call "hospitalism" of which the patient is cured by being sent out of the hospital. We see the type of homesickness and again the patient is cured by being sent home. We do not see the type in which the patient is depressed by the thought of loss of organs, and broods on a physical deformity.

Dr. Francis X. Dercum: The great rôle played by neuropathy in postoperative mental disturbances should discourage operation in such subjects, except under circumstances of grave necessity.

Dr. John K. Mitchell: Of 344 cases of general mental or nervous disturbances there were only thirty-one cases which could be called postoperative. There seemed to be no relation between the severity of the operation and the severity of the mental disturbance. Fright, I feel sure, plays a larger part than is generally attributed to it. There are good surgical reasons for getting a patient out of bed as soon as possible, but these troubles would be less frequent if the period of rest in bed were increased and general treatment instituted. Should the question of surgical treatment of a neurasthenic patient arise, much more than ordinary care must be observed in deciding on operation.

Dr. Charles K. Mills: Of many serious cranial operations under my observation I can recall perhaps only two or three in which insanity has followed the procedure. There have been very few also following operations on the spinal cord. In my experience these insanities have occurred in women of a certain temperament and of a certain predisposition rather than in the neurasthenic type.

Dr. S. Weir Mitchell: The question arises concerning the result of the use of local anesthesia which has become so fashionable in some circles. I hear of abdominal operations done under local anesthesia. I think to have the interior of one's abdomen exposed to one's own view would tend as much as possible to produce some of the insanities of which we have been speaking. It is a fact that occasionally insanities have been cured by grave operations. One such case was an amputation. Another was an attempt on a man's part to cut his throat. The man bled almost to the point of death, but his life was saved, and he recovered from his insanity. I do not recommend the method. I have seen many cases in which sudden delirium or sudden delusion followed instantly on a gunshot wound. One case was that of a colonel who, after being shot, cried to his men to run, that the rebels were on them. He fell on his face, was delirious for some time, but after amputation of his arm, he returned to the regiment that evening. Another case was that of an officer in the Mexican War, a man of well known courage. A ball struck his heel, he limped up and down the line calling to his men to run that everybody was going to die, and for hours he was in a condition of the wildest maniacal excitement. This passed away within forty-eight hours. He asked for a court of inquiry which, of course, was denied a man so well known for courage.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

November 24

1 Technic of Operations for Stone in the Ureter. H. Cabot, Boston.
2 *Staining Capsulated Bacteria in Body Fluids. W. H. Smith, Boston.
3 Cancer of the Scrotum. R. M. Green, Boston.
4 Technic of Arthrotomy. C. F. Painter and A. P. Cornwall, Boston.

2. **Staining Capsulated Bacteria.**—The following method of staining capsulated bacteria in body fluids has been found during the past two years, in Smith's hands, to yield more uniform results than any other:

1. Make a thin smear from fresh sputum, lung, pleural or pericardial exudate.
2. Pass through flame.
3. Cover with 10 per cent. aqueous solution of phosphomolybdic acid.
4. Wash in water.

If the microorganism is Gram-staining like the pneumococcus or *streptococcus mucosus capsulatus,* stain with:

5. Aniline oil gentian violet, steaming one-quarter to one-half minute.
6. Wash in water.
7. Treat with Gram's solution of iodin, steam one-quarter to one-half minute.
8 Decolorize with 95 per cent. alcohol.
9. Wash in water.
10. Stain with 6 per cent. aqueous solution of eosin (Grübler's w. g.) one-half to one minute, warming gently.
11. Wash in water.
12. Wash in absolute alcohol.
13. Clear in xylol and mount in Canada balsam. The capsule will be found to be distinct, clear cut, eosin-stained, about the Gram-stained microorganism.

If the microorganism is Gram-decolorizing, after covering the smear with phosphomolybdic acid and washing,

1. Stain with 6 per cent. aqueous solution of eosin from one-half to one minute, warming gently.
2. Wash in water
3. Counter stain with Loeffler's methylene blue from one-quarter to one-half minute, warming gently.
4. Wash in absolute alcohol.
5. Clear in xylol and mount in Canada balsam.

The capsule will appear eosin-stained about the blue-stained microorganism.

Medical Record, New York

November 26

5 The United States Naval Medical School. H. G. Beyer, United States Navy.
6 Philosophic Anatomy of the Liver. E. Souchon, New Orleans.
7 Chemical Problems in Diabetes. A. Magnus-Levy, Berlin.
8 Tuberculin Treatment in Advanced Tuberculosis. F. A. Deal, New York.
9 *Preliminary Examination of Children at Dispensary as Means of Protection Against Contagious Diseases. S. Welt-Kakels, New York.
10 Practical Value of Positive Complement-Fixation Test in Syphilis. G. W. Vandegrift, New York.

9. **Examination of Children at the Dispensary.**—Kakels describes the method of preliminary examination of patients at the Mount Sinai Hospital which has been in use for two and a half years past. This is the first dispensary in the city which has initiated such a system, and the number of its patients is very large, indeed. As the patients pass in they go between rails and are sent by the orderly to a physician who examines the throat and skin of each child. If a contagious disease is detected the child is taken to an isolation room. Non-contagious diseases that need immediate treatment may also be detected. There is at present in all dispensaries a great lack of care in handling contagious diseases, and as at present conducted they aid in disseminating them. The dangers would be much lessened by a preliminary examination of all attending children, and as a sanitary safeguard it should be established in all institutions. Kakels concludes by stating:

1. There is at the present time an evident lack of prophylaxis in handling contagious cases at the dispensary.
2. As at present conducted, dispensaries contribute to the dissemination of infectious diseases among the poor by contact infection in the common waiting-room.
3. If not entirely eliminated, the danger of exposure is lessened by the preliminary inspection of children, a prophylactic measure which aims at an early detection and exclusion of contagious cases and "suspects" before entering the common waiting-room.
4. Preliminary examination of children has been conducted at the Mount Sinai Dispensary since April, 1907, with satisfactory results.
5. Its establishment in similar institutions is required as a sanitary safeguard and on the ground of public economy.

New York Medical Journal

November 26

11 Carbon Compounds of Arsenic in Treatment of Syphilis. S. C. Runnels, Indianapolis.
12 Chemistry of Cancer. S. P. Beebe, New York.
13 Hot-Air Treatment of Phagedenic Chancroid and Chancre. E. W. Ruggles, Rochester, N. Y.
14 *Introduction of Large Quantities of Gases Into the Circulatory Apparatus. C. B. Fitzpatrick and J. P. Atkinson, New York.
15 Clinical Statistics. I. S. Wile, New York.
16 Treatment of Symptoms in Hospitals. B. Robinson, New York.
17 An Improved Operating and Observation Endoscope for the Anterior Urethra. J. F. McCarthy, New York.
18 Acute Myelogenic Leukemia. J. A. Wolfer, Chicago.
19 Steps Toward the Prevention of Postoperative Exudates. W. E. Dicken, Oklahoma City.

14. **Introduction of Gas Into Blood.**—According to the general experience of investigators on this subject, a dose (from 60 to 100 c.c.) of air given at one time, constitutes the usual fatal dose, causing death almost instantly. Ninety-five cubic centimeters intrajugularly in Fitzpatrick's and Atkinson's experiments in untreated normal dogs always caused death instantly. After a number of experiments with the previous introduction of glycerin or olive oil into the femoral vein, to prevent foaming or churning after introduction of large quantities of air, they have found that the use of these substances is not necessary and they have obtained as good results without the use of olive oil or glycerin. The intravenous administration of 3.5 c.c. of a 50 per cent. solution of glycerin in normal salt solution in a 35-pound dog was followed by the rapid introduction of 28 c.c. of air (femoral) without any harmful symptoms or any trace of a kymographic disturbance. The next experiment, the dog weighing 10 pounds, was made to determine the toxic dose of glycerin when injected intravenously. The introduction of 7 c.c. of a 50 per cent. solution of glycerin in normal salt solution caused an immediate and marked drop followed by a slight rise in the arterial pressure. This was followed by another equally short drop in pressure, with heart paralysis. Respiration continued for a time and quite suddenly ceased. They believed at first that these experiments would be explained by supposing that an increased viscosity of the blood was acquired through the introduction of glycerin and olive oil, that these substances gave an increased tolerance for the presence of air in the blood-stream or that the oil acted on the blood mixed with air as oil on the breaking waves of the stormy sea, in that it prevented the bubbles or waves from breaking, and thus gave the heart a solid medium to compress on. But the experiments on the untreated dogs show these previous injections of glycerin or oil to be unnecessary. It would, moreover, appear to be probable that small amounts of air are absorbed in the blood-stream before it reaches the heart. The authors believe that they have found evidence that the adrenals play a very important rôle in enabling the lungs and the circulatory apparatus to eliminate the air introduced. It is apparent, moreover, that if the air is eliminated by this means it is possible that it is carried in by the same means.

Lancet-Clinic, Cincinnati

November 26

20 Surgery of Musculospiral Paralysis. A. H. Barkley, Lexington, Ky.
21 Thoracic Surgery. B. M. Ricketts, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

November 11

22 Man's Inhumanity to Man. E. T. Brady, Abingdon, Va.
23 Diet in Tuberculosis. L. S. Peters, Silver City, N. M.
24 Diagnosis of Tubal Abortion and Rupture. C. E. Congdon, Buffalo, N. Y.
25 Tumors of the Scrotum. O. L. Suggett, St. Louis.
26 Treatment of Wounds—Surgical Dressings and Applications. L. Sexton, New Orleans.
27 History of Electrocution in the State of Virginia. C. V. Carrington, Richmond.

Denver Medical Times and Utah Medical Journal, Denver

November

28 Studies of Feces. The Use of Carmin as an Indicator in Test-Meals. C. D. Spivak, Denver.
29 The Owen Bill and Its Opponents. S. A. Knopf, New York.
30 Bryonin. H. H. Redfield, Chicago.
31 Stammering and Its Cure. E. D. Feldman, New York.
32 Life of Jenner and His Work in Relation to the Public and the Physician. W. T. Hasler, Lehi, Utah.
33 Rocky-Mountain Spotted Fever. W. Waugh.

University of Pennsylvania Medical Bulletin

November

34 *Sphygmographic Studies from a Case of Valvular Heart Disease. G. W. Norris, Philadelphia.
35 *New Operation for Adolescent Hallux Valgus. J. K. Young, Philadelphia.
36 *Auscultatory Method of Determining Blood Pressure. E. H. Goodman and A. A. Howell, Philadelphia.
37 Experimental Investigation on the Inter-Relation of Some Bacterial and Body Enzymes, as Well as of Their Respective Antibodies. W. L. Croll, Philadelphia.
38 New Filarial Species Found in *Heloderma Suspectum*, and Its Larvæ in a Tick Parasite on the Gila Monster. A. J. Smith, Philadelphia.
39 The Medical Side of Benjamin Franklin. W. Pepper, Philadelphia.

34. **Valvular Heart Disease.**—This was an ordinary case of double mitral disease of many years' duration, in an individual who subsequently became insane, with numerous attacks of broken compensation, but there are a number of interesting facts connected with the case. First, it was rather curious to note the way in which insanity returned and became progressively worse hand in hand with a most remarkable improvement of the patient's cardiac action and general physical condition. Secondly, the pulse tracings demonstrate graphically the manner in which digitalis slows the pulse and increases the pulse volume, and how it changes the hopeless irregular pulse of a nodal rhythm into an orderly, regular, and continuous bigeminus form; and how, when it is pushed still further, it causes the second beat of each bigeminus to drop out in the peripheral arteries entirely, thus producing a false bradycardia. When, however, the drug is continued beyond this point its effects are not so good. A tracing taken five days after digitalis had been withdrawn, shows the persistent effect of the drug in the latter two-thirds of the tracing, in which the heart has suddenly and without apparent cause changed to the bigeminal rhythm. This is also shown in a later tracing in which a bigeminus which was still present six days after the withdrawal of digitalis suddenly disappeared during a period of voluntary apnea. The effect of digitalis in increasing tonicity—diminishing dilatation—is shown in a tracing in which the hitherto systolic retraction of the apex beat is changed into a systolic elevation. This change went hand in hand with a marked amelioration in the patient's condition. The action of the digitalis in producing bigeminus is not an accidental one. It occurred in the present case on each occasion when this drug was administered in sufficiently long and large dosage; and disappeared each time that digitalis was withdrawn long enough to allow its physiologic effect to pass off.

35. **Adolescent Hallux Valgus.**—In the preparation of this paper 134 fresh skeletons of feet were examined by Young, to determine the relative frequency of this affection, as well as its etiology. The condition was found to exist in seven feet, and in these was found a peculiar change in the articular surfaces of the first tarso-metatarsal joint, which appears to be characteristic, and in some degree causative. It was also noted that there is often present in the first tarso-metatarsal joint in subjects afflicted with this deformity, a wedge-shaped supernumerary bone similar to, or related to, the inter-metatarseum described by Dwight. Young proposes an operation for its relief. The foot having been carefully prepared and rendered aseptic, a curvilinear incision, 3 inches long from the instep, the center of which is over the first metatarsal phalangeal articulation; the flexor hallucis tendon is retracted to the inner side, the joint is exposed by a Farrabouf periosteotome, and the triangular piece of bone is removed by means of a chisel. As there is one difficulty in recognizing the articulation, this is best accomplished by using a steel meter measure or a wooden tongue compressor which has been marked from the *x*-rays, the distance being taken from the distal end of the first metatarsal bone to the joint. The removal of this triangular piece of bone leaves a space, which is corrected by placing the foot in a marked equinovarus position. A triangular piece of gauze is placed between the first and second toes and a pad is placed beneath the arch of the foot and a small straight wooden splint is placed along the inner side of the foot over the metatarsal phalangeal joint. The foot is secured in this position in plaster-of-Paris dressing and maintained for three months. In adults, the writer recommends the Wilson, Riverden, or Riedl's operation, according to the severity of the cases.

36. Abstracted in The Journal, Oct. 29, 1910, p. 1581.

Dominion Medical Monthly, Toronto

November

40 Colon Bacillus Infection of Genito-Urinary Tract in Infancy. A. L. Kendall, Vancouver, B. C.
41 Tumor of the Brain. G. Chambers and G. A. Bingham, Toronto.
42 Medical Thoughts, Fads, Fancies and Foibles. J. S. Sprague, Perth, Ont.

Journal of the Delaware State Medical Society, Wilmington

November

43 General Treatment of Tuberculosis. P. R. Smith, Wilmington.

Cleveland Medical Journal

November

44 *Special Field of Neurologic Surgery; Five Years Later. H. Cushing, Baltimore.
45 *Epidemic of Diphtheria in a Convalescent Home for Children. R. G. Perkins and A. F. Furrer, Cleveland.
46 Cerebrospinal Meningitis, Especially Diagnosis and Treatment. L. W. Ladd, Cleveland.
47 Sero-Cyto-Diagnosis and Its Importance in Diagnosis of the Various Insanities. J. D. O'Brien and O. D. Tatje, Massillon, Ohio.
48 *Malaria in Early Infancy. F. Beekel, Cleveland.

44. Also published in the *Bulletin of the Johns Hopkins Hospital*, November, 1910.

45. **Diphtheria Epidemic.**—The study of this epidemic by Perkins and Furrer emphasizes the importance of administering a prophylactic dose of antitoxin to all children on admission to a hospital; the necessity and value of taking cultures and making bacteriologic examinations; and the advisability of taking cultures from the nose as well as from the throat before discharging patients from quarantine. The nurse in attendance on a diphtheria case should not be discharged from quarantine until negative cultures have been obtained. Isolation, quarantine, disinfection and fumigation are found to be of little or no value in controlling an epidemic until a systematic search is made for latent infections among inmates.

48. **Malaria in Early Infancy.**—Beekel's patient was only 10 weeks old. He was a first-born child, had been breast-fed entirely and had been well except for the present illness. This began three weeks before, and had been marked by symptoms of feverishness, restlessness, quickened breathing, lessened desire for food, occasional vomiting and increased frequency of bowel movements. The infant was well-developed and well-nourished. His appearance was remarkable because of the extreme pallor; the normal skin tint was replaced by a lemon-yellow color and the visible mucous membranes were almost white. The breathing was from 50 to 60 times a minute with slight expiratory grunting and some movement of the alæ nasi. There was no skin rash. The throat and mouth were negative. The chest examination was negative. The spleen was easily palpable and hard, and extended 3 cm. below the edge of the ribs. The liver was 3 cm. below the costal margin. There was no visible peristalsis, and the abdomen was not distended. Two small glands were felt in the posterior cervical region and one in the left axilla. The stool was of an orange-yellow color. The blood examination showed: hemoglobin, 30 per cent.; white blood-cells, 14,800; red cells, 1,600,000. Examination of stained specimens showed a very noticeable variation of size of the red corpuscles with poikilocytosis and polychromatophilia and nucleated red cells in large numbers, while the presence in many corpuscles of bluish-gray, pigmented, slightly irregular bodies solved at once the question of diagnosis. Hyaline forms of the parasite, early pigmented forms, a few filling from one-third to three-quarters of the infected red cell, presegmenting and segmenting forms numerous enough to be easily found were all present. Both father and mother of

the infant were found to have suffered from malaria, the father at the age of 15, the mother when 12 years old, but to have been free from symptoms for some years. The spleen in each of the parents was just palpable on deep inspiration. The child received quinin bisulphate in solution, 1½ grains, three times a day, syrup of the iodid of iron in 2 drop doses, three times a day, was prescribed at the second visit, and was continued to the end of the second month The child recovered

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

November 15

49 Transactions of the Forty Second Annual Meeting of the Minnesota State Medical Association

Colorado Medicine, Denver

November

50 Dicephalus Dibrachius W W Reed Boulder Colo
51 Medical Nihilism J E Pearns Pueblo Colo
52 Atrophy of the Liver Atrophic Cirrhosis of Spleen and Pancreas and Fatty Degeneration of the Kidneys H G Garwood, Denver

Vermont Medical Monthly, Burlington

November

53 General Principles of Serotherapy D Marvin Essex Junction
54 Lumbar Puncture C H Beecher Burlington

Archives of Pediatrics, New York

November

55 *[illegible] Infancy D B Friedenwald Baltimore
56 [illegible] Urinary Tract in Children L Porter San Francisco
57 *Orthopedic Treatment of Spinal Paralysis F Lange, Munich Germany
58 Clinical Significance of Lack of Development of the Pyramidal Tract in Early Infancy B K Rachford Cincinnati
59 *Nitrogen Metabolism in Healthy (Artificially Fed) Infants B R Hoobler New York

55 **Pyelocystitis in Infancy**—Friedenwald's study is based on a series of eighty cases, derived from a large foundling hospital, it is made up largely of young infants many of whom suffer from nutritional disorders and among whom infections, particularly influenza, are very common In this series he found fifty eight females and twenty two males, tending to show that the disease is much more common among males than previously believed The youngest child was 11 days, the oldest 22 months Under one month there were three, from one to three months twenty five, from three to six months, twenty two, from six to nine months, fourteen from nine to twelve months, ten, and over one year, six patients Fifty four cases occurred between the first of December and the first of June The months of May, February and March had respectively thirteen, eleven and ten patients while June had none and October and November each three The colon bacillus was demonstrated in a number of this series The proteus bacillus was found twice, the *B lactis aerogenes* once During the year ending Feb 1, 1910, there were twenty two cases of pyelocystitis, one half of these occurred in the months of November, December and January, during a severe epidemic of grippe Fifty nine of the cases were directly preceded by either some infection or an acute nutritional disorder, while only seven occurred under observation which were not preceded by a previous serious disorder The fourteen remaining patients entered with this condition Twenty one cases were preceded by some infection of the respiratory apparatus, of which seven were influenza and two diphtheria, twelve others by otitis media, seven by alimentary intoxication, six by septic conditions five by enteritis follicularis four by stomatitis, two by active syphilis with profuse eruption and one each by tuberculosis and vaginitis Of twenty necropsies the kidney pelvices and bladder both showed pathologic changes in fifteen instances, three times the pelvices were alone involved once the bladder alone and in one instance there were no pathologic findings in the urinary apparatus although the child had had pyuria six weeks previous to death That the lesion can be a simple catarrhal inflammation which quickly heals was shown in a case in which the patient developing a pyelocystitis after an alimentary intoxication and dying seven weeks later of acute tuberculosis gave no pathologic findings in either pelvices or bladder

57 Abstracted in The Journal, July 2, 1910, p 48

59 **Nitrogen Metabolism in Healthy Infants.**—The study of nitrogen metabolism, which Hoobler presents, is a portion of a larger metabolism problem which involved the determination of the nitrogen, fat, sulphur, magnesium and calcium in the food, urine and feces covering a nine day period, divided into three periods of three days each. The child used for this study was a healthy, robust, vigorous infant of nine months fed from birth on modified cow's milk, who was admitted to the hospital for operation for the closure of harelip The child was fed on three different cow's milk mixtures These involved the use of (certified) whole milk, fat free milk and 16 per cent cream, all of which were secured from the Walker Gordon milk laboratory, and when modified represented a low fat, medium fat and a high fat formula. Specimens of each of the three types of milk were carefully analyzed The child was kept on a definite formula at least two days before being put in the metabolic frame, and was kept three days continuously in the frame and given the same formula, so that the feedings were of five days' duration, while the metabolism experiment covered the last three days of the period *After each three day period in the frame the* child was given a rest for about ten days before being put into the frame again, during which time he was fed on Walker Gordon certified whole milk This period of rest gave the child ample time to recover his normal activities before going into the frame again The urine was collected daily and the total nitrogen, urea, ammonia and kreatinin determinations were made the same day, as were also the tests for acetone, diacetic acid and beta oxybutyric acid and total acidity The urine was then placed on ice until the salts were analyzed The feces were collected in daily quantities, except in two instances, when forty eight hour periods were collected were dried over water bath pulverized and passed twice through a No 40 sieve and stored in glass containers until examined. The methods used for the nitrogen determinations with which this paper deals were the Kjeldahl method for total nitrogen, Folin's method for ammonia, Folin's method for kreatinin and Folin's method for urea Controls were made and repeated when necessary It was found that nitrogen is absorbed exceedingly well by healthy infants fed on cow's milk mixtures The per cent of absorption at varying ages is about the same, even though the intake of nitrogen per kilo differs greatly Nitrogen absorption is carried on equally well under low medium and high fat feeding The percentage of absorption varies little from day to day The proportion of the food nitrogen which is retained is about one third The percentage retained is about the same for the three ages discussed Retention takes place in about the same percentage, whether fed on low, medium or high fat Percentage nitrogen retained remains about the same, whether fed on low, medium or high proteid In high proteid feeding a larger amount of nitrogen is absorbed and eliminated, thus causing more work" to be performed by the infant than on a lower proteid feeding Body weight may diminish under a fair nitrogen retention Nitrogen is largely eliminated through the urine Considerably more than half of the nitrogen ingested is excreted in the urine A very small quantity is found in the feces The excretion of ammonia nitrogen was higher on "high fat" mixtures than on 'low fat" mixtures.

Therapeutic Gazette, Detroit

November

60 Congenital Dislocation of the Hip H A Wilson Philadelphia
61 Treatment of Typhoid Fever B N Ghosh Calcutta
62 Effects of Hashish Not Due to Cannabis Indica M V Ball Warren Pa
63 Rational Treatment of Acute Glaucoma—Iridectomy Empirical A Bray Philadelphia
64 Treatment of Fractures of the Shaft of the Femur—End Results W L Estes, South Bethlehem Pa

West Virginia Medical Journal, Wheeling

November

65 The Betterment of the Medical Profession T W Moore, Huntington
66 Transverse Presentations G B Miller Washington, D C
67 Membraneous Croup or Laryngeal Diphtheria R U Drinkard Wheeling
68 Typhoid G C Rodgers Elkins.

Iowa Medical Journal, Des Moines

November

69 Cerebral Decompression. L. W. Littig, Davenport.
70 Extra-Gastric Conditions Producing Gastric Symptoms. D. S. Fairchild, Clinton.
71 Differential Diagnosis of Pathologic Conditions in the Upper Abdomen. A. L. Wright, Carroll.
72 Surgical Conditions of the Right Lower Quadrant. G. E. Decker, Davenport.
73 *Acute Epidemic Poliomyelitis. C. E. Dakin, Mason City.

73. **Acute Epidemic Poliomyelitis.**—The author discusses in detail the symptomatology, diagnosis and treatment of acute epidemic poliomyelitis, including abortive measures. There is no apparent reason, he says, why inflammation should not yield to local depletent measures here as well as elsewhere. This can be accomplished in several ways, the first and most obvious being by thorough catharsis. This is best done with calomel and castor oil. Castor oil is the most efficient agent, aided by enemas containing glycerin and turpentine. Local counter-irritation may have some effect on the congestion and in connection with hot or cold packs should not be neglected. Among the drugs which act to reduce the spinal circulation the most efficient is gelsemium, which should be given in small but frequent doses, until the effect is marked, and continued until the motor excitation is controlled; in severe cases it may even be given until the eyelids droop and sight is perceptibly affected. The fact that after the administration of hexamethylenamin it may be demonstrated in the spinal fluid has led to its use in this disease. The only patient in this series who received it died within a few hours after its first administration and there has been no opportunity since to test it, but on theoretical grounds it would seem to be valuable.

Journal of the Tennessee State Medical Association, Nashville

November

74 A Leaf from the Catechism of Pediatrics. H. Hawkins, Jackson.
75 Ophthalmia Neonatorum, or Inflammation of the Eyes of the New-Born Infant. J. L. Minor, Memphis.
76 Purulent Ophthalmia. O. Dulaney, Dyersburg.
77 Transduodenal Choledochotomy for Removal of Stones from the Diverticulum and Distal Extremity of the Common Duct. F. D. Smythe, Memphis.
78 Suggested Changes in Standards in Medical Education. B. F. Turner, Memphis.
79 Treatment of Bronchopneumonia. E. W. Mabry, Meagsville.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

November

80 Present Status of Abdominal Cesarean Section. G. B. Johnston, Richmond.
81 Intrathoracic Tumor. W. S. Thayer, Baltimore.
82 Diagnosis of Duodenal Ulcer with Indications for Operative Treatment. J. H. Gibbon, Philadelphia.
83 Poliomyelitis from the Orthopedic Viewpoint. W. P. Mathews, Richmond.
84 The Problem of Visceroptosis. G. Baughman, Richmond.

Northwest Medicine, Seattle, Wash.

November

85 Principles in the Etiology and Treatment of Disease. J. M. Taylor, Boise, Idaho.
86 Spinal Anesthesia. C. C. Snyder, Salt Lake City.
87 Anterior Poliomyelitis in Idaho. G. E. Hyde, Rexburg, Idaho.
88 Diagnosis and Treatment of Hip-Joint Conditions. C. F. Eikenbary, Spokane, Wash.
89 *Treatment of Lateral and Posterior Curvatures of the Spine by Graded Forcible Correction. E. A. Rich, Tacoma, Wash.
90 Some Mistaken Diagnoses. N. W. Jones, Portland, Ore
91 Tuberculosis of the Larynx. A. E. Burns, Seattle, Wash.

89. **Curvatures of the Spine.**—Seeking a means of lateral suspension Rich constructed a frame, in which he can suspend a patient in a horizontal position, and is enabled to apply a plaster corset. The main upper shaft of the frame is provided with several sliding collars, each bearing pulleys and rope. A platform is provided for preparation at a lower level. Anyone could extemporize the affair with several pulleys attached to the ceiling. The patient when stripped in preparation is laced on the platform on his side, having the side of the greatest convexity down. With a piece of canvas four or five inches wide the body is raised from the platform with the pull against the main spinal curve. With the body weight thus suspended on a fixed point, that part above the fulcrum and that below have enough potential from their own weight more or less to correct the deformity. The point of the maximum curve is marked and the body suspended from that point. When the spinal curve is low dorsal, the head will have to be likewise supported. Thus, when all is in readiness and the suspension is enacted, most of the body weight will be pendant laterally at the maximum point of the curve. By thus supporting the weight of the torso in these hammocks the following things are accomplished: 1. There is correction of rotation from pressure on the ribs. 2. The wide diameter of the chest on the side of the curve, known as the "rotation," is narrowed by being compressed into the angle and two sides of V-sling. 3. After one or two hours of suspension, while the muscles are being overcome, there is evolved enough potential from the weight of the parts of the torso above and below the point of suspension to enforce powerful correction of the deviation of the spinal column. 4. The torso, without hampering appliances, is forced into a position of correction suitable for the application of a retentive apparatus. For several days Rich suspends the patient for an hour or two to accustom him to the correction before splints are applied continuously. He has been substituting for the cast a plaster "figure-of-eight," which maintains pressure on the great dorsal curve by counter pressure on the compensatory cervical curve and on the pelvis. This splint might accomplish its purpose by encircling the one side of the pelvis, but it is borne much better if both hips are included. When putting these casts on, Rich applies the plaster bandages liberally about the body as we used to in putting on the old jackets, taking pains to reinforce well over the track of the figure eight. When the plaster sets all the unnecessary areas are trimmed off. This splint gives a means of very good retention and allows free respiration and suggests further correction. In posterior curvatures the patients are suspended at the point of the greatest deflection, lying on their backs, allowing, however, several hours to elapse before applying the corset to insure muscular relaxation and consequent correction.

Ophthalmic Record, Chicago

November

92 Sporotrichosis of the Eyeball and Eyelids. H. Gifford, Omaha, Neb.
93 Education of Marie Heurtin, Deaf, Dumb and Blind from Infancy. S. H. Brown, Philadelphia.
94 A Hookfront Binocular Magnifier. W. Reber, Philadelphia.
95 Long-Continued Use of Strychnin in Toxic Amblyopia. E. M. Blake, New Haven, Conn.
96 A Simple Device for Pneumomassage of the Eye. J. W. Dunn, Cairo, Ill.
97 Anisometropia. C. W. Kollock, Charleston, S. C.

Medical Herald, St. Joseph, Mo.

November

98 Terminology and Significance of Arthritis. G. H. Hoxie, Kansas City, Mo.
99 *Plaster-of-Paris as a Universal Dressing in Fractures of the Lower Extremity. H. W. Orr, Lincoln, Neb.
100 Tumor of the Temporosphenoidal Lobe. G. A. Young, Omaha, Neb.
101 A Day's Medical Practice in Egypt. D. L. Askren, Fayum, Egypt.
102 Early Diagnosis of Tuberculosis in Children. B. W. Toothaker, St. Joseph.

99. **Plaster of Paris as a Universal Dressing.**—Orr has been using a modified method of applying plaster of Paris which he believes fulfills all the requirements of successful fracture treatment. The results in his own cases have been such as to justify a recommendation of its wider use. The method consists of applying plaster to the fractured extremity in the following manner. Plaster bandages are first applied over a suitable protective dressing like sheet wadding to include the foot and extend up to within a few inches of the point of fracture, whether in the leg, thigh or hip. When this is well set, firm traction is made on the finished portion of the cast; if there is a tendency of the upper portion to sag, it can be supported at the point of fracture, while the upper end of the cast is applied, beginning within a few inches above the point of fracture and extending to the hip in case of leg fracture or up to the thorax in case of any fracture of the femur. This upper portion of the cast is now also allowed to set and the cast is complete except at the point of fracture. The relation of the fragments of bone can now be determined and the third part of the cast applied. When this has set, immobilization is perfect and the traction which has been kept during the application of the last section of the cast is maintained as permanent traction. Any degree of traction can be obtained in applying plaster in this way. The objection

usually urged to the application of this form of cast is that allowance must be made for swelling of the parts; if such allowance must be made, it can be accomplished by the use of sheet wadding or some other material under the plaster. Orr believes that when good traction and immobilization are obtained so much allowance need not be made for swelling. Most of the swelling which follows an injury of this character is the result, not of the injury itself, but of failure to secure fixation of the injured part. When there is failure to secure immobilization, there is continued irritation and continued pain and also constant swelling. If the injured extremity is put entirely at rest there is little or no pain and but little swelling. Of course certain injuries are associated with fractures which produce a considerable reaction, but fractures of the hip, thigh and leg, unless accompanied by severe injuries of the soft parts, seldom produce severe swelling. He firmly believes that plaster of Paris combined with a reasonable degree of professional care and skill can be used in any fracture or injury of the lower extremity, and that nothing can be accomplished with any of the usual mechanical appliances or splints recommended for this purpose, but that can be obtained more easily and more satisfactorily with plaster of Paris.

Journal of Ophthalmology and Oto-Laryngology, Chicago

November

103 Anatomically Misplaced Puncta. C. W. Hawley, Chicago.
104 Prevention and Treatment of Sympathetic Ophthalmia. M. R. Dinkelspiel. Wilkesbarre, Pa.
105 Malignant Tumors of the Throat Arising from Syphilitic Cicatrices. C. M. Robertson, Chicago.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Practitioner, London

November

1 Pyometra. H. Croom.
2 Use of Plates and Screws in the Operative Treatment of Fractures. W. A. Lane.
3 Modern Treatment of Rheumatism. W. Murrell.
4 Congenital Hypertrophic Stenosis of the Pylorus. J. H. Nicoll.
5 *Etiology, Treatment and Pathology of Venereal Diseases. J. E. R. McDonagh.
6 Clinical Aspect of Intussusception. J. E. Adams.
7 Vicious Circles in Diseases of the Eyes. J. B. Hurry.
8 *Treatment of Vomiting Following Chloroform Anesthesia, Including the Use of Adrenalin. J. W. Keay.
9 *Open Method of Ether Administration. G. A. H. Barton.
10 State Prevention of Tuberculosis. D. Mulloy.
11 Primary Diphtheria of External Urinary Meatus. A Howell.
12 Pulmonary Edema and Death. H. Matthews.

5. **Venereal Diseases.**—Of twenty patients treated by McDonagh with Ehrlich's "606," in only one was there albuminuria, which appeared a few days after the injection but did not last longer than twenty-four hours. Two individuals had a localized toxic edema of one buttock, which quickly resolved under frequent applications of lead lotion.

8. **Treatment of Vomiting After Chloroform Anesthesia.**—In Keay's opinion the cause of this vomiting varies in almost every case, and generally both the central nervous system and the stomach are at fault. The derangement may be chiefly central or chiefly local, but there is always some combination of the two. In very severe cases interference with the functions of the liver and general metabolism may be the cause. A nervous patient who has had a minor operation with short anesthesia feels violently sick, and the strenuous efforts to vomit can be distinctly heard through a closed door. A little mucus is the result. If an enema of bromid and chloral be given the violent retching ceases as the feeling of nausea disappears. If the patient has not been properly prepared for the anesthetic by low diet and tonic treatment, nausea and vomiting come on early, usually during the administering of the chloroform, and ceases, or are lessened in severity, when the stomach is emptied. This proves that with chloroform anesthesia the stomach is made irritable and wants rest. The rational treatment, therefore, for ordinary cases is: give nothing by the mouth for twenty-four hours till Nature has reasserted herself. Any foodstuff, however readily digested, if introduced into the stomach, will further irritate that organ. Thirst, which may be complained of, can be assuaged by saline enemata. When the tongue and mouth feel dry, rinsing out the mouth with aerated soda-water or lemon-water, either hot or cold, will relieve the condition.

The vomiting tends to be more severe when the anesthesia has been prolonged. The treatment for such cases is long draughts of strongly alkalin solutions aided by counter-irritation over the epigastrium. Bicarbonate of soda dissolved in hot water may be given by the tumblerful. Hot fomentations, poultices with or without mustard, blisters, or an ice-bag are all efficient counter-irritants for the epigastrium. Of these, hot fomentations or a light poultice are the best. It is often found necessary to use some medicinal means to cure the gastritis. Keay has found that a mixture of dilute hydrocyanic acid, bismuth and soda acts very well, and in some patients with a foul tongue, powders of rhubarb, bismuth and soda are useful. In all major gynecologic operations, attended with some degree of shock, whether due to excessive exposure of the abdominal contents, to great loss of blood, or to sepsis, the complicating effects of the anesthetic are more pronounced. After most abdominal operations flatulence is relieved by giving salines by rectum, from one pint to one quart every four hours, a rectal tube being left *in situ* for an hour or so between times. Rubbing the abdomen adds to the comfort of the patient; more vigorous treatment may be required, such as turpentine enemata. If the violent sickness still persists on the second day, castor oil or magnesium sulphate should be given by the mouth. Although these drugs are most often rejected a certain quantity stays down and will do good. If the bowels do not act in six hours an enema of soap and water will prove effectual. Peristalsis, which is failing under the stress of the constant sickness, can be sustained by rectal enemata of brandy and water and sips of brandy by the mouth.

When the vomited matter is hemorrhagic and resembles beef-tea dregs or coffee grounds, the patient should be stimulated by copious draughts of hot soda solution, and in addition a solution of adrenalin chlorid, m v to m x, in a teaspoonful of water, should be given by mouth. It stimulates the muscles of the stomach walls, blanches the dilated capillaries, and sets up regular rhythmical contractions of the stomach, which causes its contents to follow their natural course and to flow on into the duodenum. For the collapse accompanied by an exceedingly rapid pulse which sometimes ensues in cases of protracted and exhausting vomiting salines and general stimulants are much more effectual than cardiac stimulants even in very large doses.

9. **Open Method of Ether Administration.**—Barton has devised an inhaler which does away with the drop bottle and only permits the passage of air over the ether during inspiration. It is made of metal and consists of a chamber with an attachable face-piece. The chamber is cylindrical, being open at the top and having another opening about the junction of the middle and lower third communicating with the face-piece. It is lined with lint which is held in place by a clip. The lint dips down into the ether contained in the well at the bottom of the chamber; the amount of ether capable of being conveniently held in the well is about 2 ounces. This is continuously soaked up by the lint, which presents an evaporating surface of twenty or more square inches. The face-piece is of the Roth-Drager type and is fitted with an expiratory valve. This may be dispensed with in cases where valves are deemed inadvisable, or may be fixed in one of two positions, either between the chamber and face-piece, or into a metal cap which is made to fit the opening at the top of the chamber. The latter position gives a stronger vapor. As designed, the apparatus is intended for use with the patient's face turned to one side. Owing to the rotation of the face-piece on its attachment to the chamber it is equally available for a right or left position of the face. For the few cases in which an upturned face is necessary, Barton has added an angle-piece for joining the chamber and face-piece. Another accessory is a pneumatic pad for use with the face-piece on patients on whom it will not otherwise fit accurately.

Australasian Medical Gazette, Sydney

October

13 Prevention of Tuberculosis H. A. Welsh
14 Cause, Effect, Incidence and Prevention of the Pneumokoniosis of Quartz Miners J S Purdy.
15 Medical Inspection of Schools J. S C. Elkington.
16 Paraplegia W Love and C. Butler.
17 Radium L H Harris
18 Congenital Cystic Lamphangioma of the Neck in a Child T Fiaschi
19 Vaccine Therapy of Diphtheria P E W Smith.
20 Repeated Prolonged Apnea in an Infant, Without Apparent Cause E S Littlejohn
21 Pregnancy in Uterus Bicornis Unicollis H. H. Marshall.

Glasgow Medical Journal

November

22 Diagnosis and Treatment of Syphilis R Muir.
23 Three Modern Poisons: Atoxyl, Veronal and Bismuth Subnitrate F Kannglesser
24 *Treatment of the Insane H F. Watson

24. Treatment of the Insane.—During thirteen and a half months, treatment of the insane without the use of sedatives has been tried at the Renfrew District Asylum, Dykebar, near Paisley. The number of patients admitted during the thirteen and a half months was 304, of whom 148 were men and 156 women. There were eleven deaths (six men and five women); a necropsy was obtained in every instance. An unusually large number of cases of dementia were admitted. This is due to the fact that 66 per cent. of the admissions were of patients transferred from other asylums; the remaining patients were direct admissions. Since the opening of the asylum on April 8, 1909, no sedative of any sort has been given, no form of restraint has been employed, no patient has been under seclusion, no case of suicide has occurred; there was but one major accident, and when it occurred two attendents who were suspected of negligence were summarily dismissed The results have been sufficiently satisfactory without sedatives, and this method of treatment has afforded an opportunity of seeing cases under circumstances different from the usual in an asylum. Watson condemns the habit of giving sedatives in quantity and over prolonged periods to patients who evidently are able to do quite well without

On admission to Dykebar Asylum, the usual treatment in every acute case, unless contraindicated, is the following: Hydrargyri chloridum mitis—calomel—(6 grs.), followed in four hours by magnesium sulphate (6 drs). Afterward such patients get a mixture containing pulvis rhei, sodium bicarbonate and hydrargyri chloridum mitis This is made up in bulk and 1 teaspoonful given thrice daily, the dose of calomel being 3 grains a day. Every morning the patient gets a soap and water enema, which is made up with soft soap, as this is considered less likely to produce a rash. This treatment is carried out till all signs of gastritis, intestinal disturbance (even constipation), with toxic absorption have disappeared.

In certain cases the patient seems to approach a comatose condition after an enema; this is due to the fact that the enema washes away adherent mucus (often in catarrhal layers) from the intestinal wall, and allows more free absorption of the toxins which are present. To prevent this, oleum eucalypti, 5 minims, added to the enema has been found to lead to rapid improvement. Bleeding has been found of use in acute conditions of insanity. A needle is inserted into the median basilic vein, and 10 c.c. of blood are drawn off, 20 c.c. of a 0.85 per cent saline solution being then injected, this treatment being repeated every second day. This seems to be much more effective than administration of diuretics, and has the advantage of acting at once When there is atony of the intestine it is well to give tincture of nux vomica, 5 minims, thrice daily, and to keep this up for from four to six weeks When a sedative has been continued over a period of years the resistance of all the tissues is lowered.

Journal of Laryngology, Rhinology and Otology, London

November

25 Anatomy of the Capsule of the Tonsil, and Its Significance in Treatment of Diseases of the Tonsil G S Hett

Annales de Médecine et Chirurgie Infantiles, Paris

November 1, XIV, No 21, pp 653-688

26 *Infantile Scorbutus (Maladie de Barlow) A B Marfan.
27 *Non Tuberculous Pyosalpinx in Virgins P. Bégouin.
28 *Eczema in Infants. C Rocaz

27. Non-Tuberculous Pyosalpinx in Virgins.—Bégouin has encountered a number of cases of inflammation of the Fallopian tubes consecutive to appendicitis in virgins, but an actual pus tube from this cause is comparatively rare. The suppurating appendix was in contact with the right tube in one girl of 16, and he removed both together. In two patients, virgins of 16 and 32, he found actual pus-tubes, bilateral and closed, non tuberculous, and resembling in every respect those found in married women. An ovarian cyst had been diagnosed in one of the cases and in the other there were evidences of recurring appendicitis. Microscopic examination excluded tuberculosis and only anaerobic germs were found. He has been unable to find any record in the literature of such closed bilateral pus tubes in virgins, but he has found records of peritonitis consecutive to pyosalpinx in little girls and older virgins. Riedel reported that in nine out of forty-nine cases he found a pyosalpinx instead of the anticipated appendicitis as the cause of the peritonitis requiring operative treatment in little girls under the age of 10 and in two virgins, out of 348 laparotomies for peritonitis in women. The infection occurred probably by way of the vagina and uterus in Bégouin's cases at least, both the patients having noticed leukorrhea for some time, the secretions being brownish and malodorous in one case

28. Eczema in Infants.—Rocaz does not attempt local treatment of eczema in infants unless the child is vigorous and healthy. But dietetic and other measures to reduce production of toxins and to facilitate their elimination, and organotherapy to supplement insufficiency of certain glands with an internal secretion, benefit the general health and the eczema frequently subsides under them alone External measures should be applied very cautiously, especially if the eczema is of large extent. Only a small area should be treated at one time and very mild applications should be used at first, the general health being watched all the time. It is important to cure the eczema, he adds, on account of its injurious influence on the nervous system and general health, and the way the skin lesions invite infection The first indication is to get rid of all scabs and they can be softened with sterilized oil or with potato poultices applied for two or three days; the poultices are soothing in the very irritable forms. The same results may be obtained with gauze compresses under rubber tissue. Simple eczema does not require antiseptic dressings but in the impetiginous form very mild antiseptics may prove useful, mercury bichlorid 1 per 10,000 or per 5,000 or a mixture of 2 parts each of zinc and copper sulphate in 900 parts water. Phenol, he states, should never be used; infants seem particularly sensitive to its toxic action. The surface once cleansed, a mild, soothing salve is needed, vaselin with zinc oxid or lard with benzoin or, if there is much secretion, a dry dressing with a powder made of 30 parts talcum, 10 parts bismuth subnitrate and 5 parts zinc oxid. With this the lesion is kept constantly covered until the scab becomes too thick, when it is softened anew with a potato cataplasm and the dry treatment then recommenced To keep the children from scratching face and head, he slips a pasteboard cuff over each arm, with the cuff wide enough to let the children bend their elbows sufficient to play with their toys, but the elbows cannot be bent enough to reach the face Bathing does more harm than good, he continues, as it exaggerates the skin trouble, and is liable to spread the infection to points still free from lesions Baths should be given very cautiously and briefly The same dietetic and hygienic measures should be enforced for the woman nursing the child as for the child itself. A change of wet nurse seldom does any good after the eczema is once well established. The food should be supervised with special care to reduce all chances of infection or intoxication. The substitution of asses' milk for cow's milk was followed by the subsidence of very extensive eczema in one case in his experience, and it has often aided in the cure in other cases. Thyroid treatment has proved effectual in a number of cases in the last two years, while in other cases no effect was apparent In the cases benefited there was usually a history of a digestive intoxication or some cachexia Under the thyroid treatment there is usually an acute exacerbation which gradually subsides and by the end of a fortnight the skin begins to look normal and a week or so later, the eczema is cured or much attenuated In a few cases the eczema seemed to be aggravated by the thyroid treatment, it should certainly be reserved for the torpid cases, Rocaz declares, but when the eczema has resisted all ordinary measures, including the dietetic and hygienic, a trial of thyroid treatment is justified and benefit may result It is harmless he states, he gives the thyroid in substance and he has never witnessed any mishaps although he has applied it in a very large number of cases and over long periods in some of them This thyroid organotherapy has proved useful for fat babies with an inherited rheumatic taint, as this 'arthritic diathesis" is liable to be accompanied by thyroid insufficiency

Presse Médicale, Paris

November 2 XVIII No 88, pp 817 824

29 *Efficacy of Roentgen Ray Treatment of Uterine Fibroma H Bordier

November 5 No 89, pp 825 840

30 Treatment of Simple Hare Lip V Veau
31 Persistence of Protozoan Infection in the Nerve Centers A Thiroux

29 **Radiotherapy of Uterine Fibroma**—Bordier gives illustrations of the findings in three cases in his extensive experience in which uterine fibroma shrunk under the influence of Roentgen ray exposures The best results were obtained with fibromas of comparatively recent development, irrespective of the age of the patient, especially large fibromas extending to the umbilicus and not over five or seven years' growth, and with small fibromas causing considerable hemorrhage He uses an aluminum filter and exposes the region of the ovaries and also the median line, in turn, with an interval of a day's rest The total dose for each of the three regions is about 4 5 units under the filters, a three weeks' rest is then imposed The menopause follows after two or three series of this kind

Semaine Medicale, Paris

November 9, XXX, No 45, pp 529 540

32 *Clinical Diagnosis of Tuberculous Appendicitis F Lejars

32 **Tuberculous Appendicitis**—Lejars reports several cases of acute tuberculous processes in the appendix with or without tuberculous or ordinary peritonitis The patients were between 20 and 32 and the feature common to all was the distention of the abdomen ushering in and persisting after the acute symptoms In other cases the appendicitis was an ordinary inflammation but was embedded in a focus of tuberculous peritonitis In another group of cases an acute tuberculous peritonitis simulated ordinary appendicitis In one such case the incision in the iliac fossa showed that the omentum, cecum and appendix were studded with miliary granulations, but there was no ascites or abscess, and he sutured the abdomen without removing anything but a scrap of omentum for microscopic examination Contrary to expectations this exploratory laparotomy seemed to usher in a turn for the better In this tuberculous peritonitis with localization mainly in the iliac fossa the acute phase is often brief, the pulse remains good and the temperature drops soon, in marked contrast to the great distention of the abdomen suggesting diffuse peritonitis Evacuation of the ascites and removal of the appendix at need will generally arrest the acute phase while exerting a beneficial influence on the tuberculous peritonitis as a whole Chronic tuberculosis in this region should be suggested by the contrast between the size and extent of the non limited tumor in the iliac region and the absence of fever and of any noticeable reaction Ascites should also suggest a tuberculous process, especially if persisting Differentiation is important on account of the prognosis

Beitrage zur Klinik der Tuberkulose, Wurzburg

XVII, No 3, pp 281 480 Last indexed Nov 5, p 1688

33 *Experimental Research on Tuberculosis Immunity and Prophylaxis P H Romer and K Joseph

33 **Experimental Research on Tuberculosis**—This entire issue of the *Beitrage* is devoted to the report of years of research at the Institute for Hygiene and Experimental Therapy at Marburg, bearing on the questions of reinfection with tuberculosis, experimental infection of suckling animals with tuberculosis and resulting immunity, the nature of immunity to tuberculosis and studies of antibodies, the etiology of pulmonary phthisis and the practical means to combat the spread of tuberculosis, and research on the various tuberculin reactions and on *hypersusceptibility to tuberculin* These questions have been studied in experiments with guinea pigs and sheep, the latter were found peculiarly adapted for the research The main fact which Romer and Joseph were trying to establish and which they now affirm has been demonstrated beyond question, is that one infection with tuberculosis confers a certain protection against further infection from the tubercle bacillus Among their other conclusions is one to the effect that in the circles where tuberculosis is most prevalent scarcely any child escapes the infection Consequently pulmonary tuberculosis in the adult develops in the overwhelming majority of cases in an organism already infected since childhood There is every reason to assume, they say that the law which governs tuberculosis in animals applies also to man, namely, that infection with tuberculosis confers immunity to further tuberculosis infection to the extent that small amounts of the infecting virus have no action on the already tuberculized system but rebound making no impression When large amounts of the infecting virus come into play this protection is inadequate to save the individual completely, but the superposed infection is modified so that it does not assume the form of galloping consumption as in the previously non infected but runs its course as chronic pulmonary tuberculous disease One of the practical consequences of this view is that it is important to distinguish between tuberculous infection and actual tuberculosis Much would be gained, they declare if efforts were directed more to prevention of phthisis rather than prevention of tuberculous infection To combat consumption effectually requires prevention of infection in children or prevention of the possibility of massive reinfection additional infection Efforts to combat the spread of tuberculosis should be concentrated more on the children to save them from the threatening infection against which they have as yet no specific means of defense The "inherited taint" is *nothing* the authors declare, but the severe infection acquired in the tuberculous family during early childhood As no source of tuberculosis infection *could* be discovered for half of the children who gave a positive response to the tuberculin test in Hillenberg's research, it seems evident that the tuberculosis virus exists in some mild permanent form in countries where tuberculosis has long been endemic, and permits what Andvord calls a beneficent vaccination against the disease Experiences with cattle have shown that the strictest hygiene has no influence in preventing the spread of tuberculosis among them There is only one thing that will do this namely the separation of the diseased from the well animals Everything points to the importance of concentrating our efforts on the child keeping it away from all contact with tubercle bacilli sowing consumptives either by removing the child from contact with the consumptive, or by isolating the consumptive or maintaining at least a relative isolation Romer and Joseph suggest the possibility of conferring immunity on children by appropriate vaccination and thus aiming them directly against the bacillus This protective vaccination has been successfully worked out for guinea pigs but it is another question whether it would prove equally harmless and equally effectual for human beings, and whether its application would ever be practicable

Correspondenz Blatt fur Schweizer Aerzte, Basel

November 1, XL No 31, pp 1025 1064

34 *The v Pirquet Tuberculin Reaction in the Non Tuberculous F Dumont

34 **Cutaneous Tuberculin Reaction in the Non-Tuberculous**—Infants with eczema seem to respond to the v Pirquet skin tuberculin test, even when they are apparently free from tuberculosis, and this excessive sensitiveness to the test is sometimes encountered under other conditions A second inoculation will generally clear up the diagnosis, as the really tuberculous are liable to give a stronger reaction the second time, while in the non tuberculous the second attempt elicits

a much weaker response, if any. The skin is sometimes found insensible to the action of the tuberculin; this is encountered most frequently in young infants. In a few cases on record the child responded with such intensity to the skin test that ulceration followed, and Karrer reports a case of this kind from his own experience. The patient was a boy of 13 who had lost his appetite, looked bad and tired easily but there were no local findings in the lungs or glands and no cough. The inflammatory reaction to the v. Pirquet inoculation of tuberculin was unusually intense, the arm swelled and ulcerated, the nostrils showed eczematous infiltration and the eyes were inflamed for a few days. By the end of three weeks a diffuse itching erythem developed, soon followed by more papulo-necrotic processes. The new papules that formed looked like the primary Pirquet papules, and the whole syndrome was evidently the result of a specific hypersusceptibility on the part of the skin. This case resembles the two reported by Bruck in lupus patients who developed a morbilliform eruption a few hours after the v. Pirquet test had been applied. The eruption recurred again after a second inoculation a week later. In the second case the reaction to the test in a boy of 8 was the ordinary positive response, but a second injection a week later elicited an eruption resembling that of scarlet fever, with conjunctivitis and swelling of glands. The exanthem gradually subsided with desquamation. Animals injected with the blood of these patients, followed by injection of tuberculin, rapidly succumbed, confirming the assumption that the explosive reaction was due to a specially large proportion of anaphylactic antibodies in the blood of these two patients.

Deutsche medizinische Wochenschrift, Berlin

November 3, XXXVI, No. 44, pp. 2033-2080

35 Goiter. (Diagnose und Therapie des Kropfs.) E. Enderlen.
36 Quinquaud's Sign. (Zur Würdigung der Quinquaudschen Fingerkrepitation.) P. W. Fürbringer.
37 *Ehrlich's "606" in Syphilis. K. Zieler.
38 Continuous Intravenous Infusion of Adrenalin. E. Koll.
39 Colon Bacilli on Food, Etc. (Nachweis des Bacterium coli in der Aussenwelt, besonders auf Nahrungsmitteln.) G. Neumann.
40 Dysentery Y Bacillus in Intestines and Liver of Former Bacillus-Carrier. G. Brückner.
41 Symphysis Clamp for Symphysiotomy. E. Frommberger.

37. **Ehrlich's "606" in Syphilis.**—Zieler mentions that hemoptysis seemed to have been brought on by the injection of "606" in a case of secondary syphilis with concomitant apical tuberculosis, and he warns that this possibility should be borne in mind. In tertiary syphilis the action of the new remedy did not seem to surpass that of mercury, and in some cases was distinctly inferior. Its special field, he thinks, will be in cases refractory to mercury, but here the "606" is liable to fail also. With recent syphilis the "606" seems to act more rapidly and with greater intensity than mercury, he says, and the fact that it is impossible to kill all the spirochetes at one stroke is of minor importance. Ehrlich's hope that this might be accomplished has already been realized with relapsing fever.

Medizinische Klinik, Berlin

November 6, VI, No. 45, pp. 1767-1806

42 Practical Importance of Manic-Depressive Insanity. R. Thomsen. Concluded in No. 46.
43 *Operative Treatment of Constipation. R. Goebell.
44 *Closed Tuberculous Hydronephrosis. F. Kroiss.
45 *Ehrlich's "606" in Syphilis. W. Fischer.
46 Benzidin Test for Blood. (Zum Nachweis geringer Blutmengen mit der Benzidinprobe.) J. H. Greeff.

43. **Operative Treatment of Constipation.**—Goebell states that he at first regarded valvotomy in treatment of constipation as another example of "American humbug," but has since found that this operation has a logical basis, and during the last two years has applied the method in six cases, slightly modifying Gant's valve-clamps, so that they can be held better by the rear and can be applied slanting at need. In his first five cases the abnormal development of the rectal valves readily explained the difficulty in rectal functioning and the division of the valves put an end to the chronic constipation. The patients were three men between the ages of 20 and 47 and two women between 21 and 27. In another case, in a woman of 26, four valves were seen in the rectum. A movable cecum was first corrected and then one of the four valves in the rectum was divided with the actual cautery. The constipation is much improved but there is still an occasional tendency in this direction. He advocates operative treatment of anomalies in the position, length and size of the large intestine, as all such anomalies are fraught with grave dangers, volvulus being liable to develop at any moment with a movable ascending colon or unusually large colon. He recently had to operate on a woman of 75 for torsion of an abnormally long sigmoid flexure, showing that age is no protection against this eventuality. In two cases he corrected an abnormally movable ascending colon and right flexure by fastening the posterior wall of the bowel to the parietal peritoneum. In three other cases he corrected conditions merely by dividing congenital peritoneal cords binding down the flexure. In one case the intestines became occluded from adherence of the omentum to the spleen after typhoid; in another case adhesion of the omentum to the spleen and diaphragm caused a train of symptoms diagnosed as cancer. The defect left by releasing the omentum was remedied by suturing the gastrocolic ligament over the defect and suturing the appendices epiploicæ to the stomach in place of the gastrocolic ligament. There has been no recurrence of the previous chronic syndrome which included alternating constipation and fetid diarrhea and colic. Recurring colic-like pains or local tenderness relieved by defecation point to some hindrance to the permeability of the bowel, and the favorable results reported above encourage, he thinks, exploratory laparotomy when nothing can be found otherwise to explain the chronic constipation. He is inclined to advise appendicectomy in every case of constipation with pains in the ileocecal region, even when the appendix is apparently sound; any tendency to undue movability on the part of the colon or abnormal size of the sigmoid flexure is revealed by the incision.

44. **Tuberculous Hydronephrosis.**—In the case reported by Kroiss a young woman complained of pain in the right knee radiating to the groin but seemed otherwise in good health; the urine was normal. The physician examining her discovered a large tumor in the right side of the abdomen of whose presence the patient was entirely unaware. Operation revealed a closed right hydronephrosis with tenacious adhesions; in removing the kidney it tore, flooding the wound with nearly two liters of fluid. The microscope revealed signs of tuberculosis in the kidney, and generalized miliary tuberculosis soon developed, proving fatal in two months after the operation. There had been nothing to indicate tuberculosis in this case before the operation, everything indicating a closed aseptic hydronephrosis. If the possibility of tuberculosis had been thought of, the sac might have been drained by puncture before the nephrectomy was attempted, and thus the wound would not have become contaminated with the infectious fluid. Krauss has reported a similar case but no general infection resulted; Rochet has recently reported three cases of tuberculous wound infection during nephrectomy, but the ultimate outcome was favorable. Kroiss adds that in another case in his own experience a teaspoonful of urine from the kidney pelvis escaped into the wound as the ureter was divided, and miliary tuberculosis followed in this case also. Kocher has informed him of a similar experience, the infection in this case proceeding from the cauterized stump of the ureter. The data related emphasize the necessity for bearing tuberculosis in mind in all operations on the kidney, even when there is nothing to suggest its presence. The findings suggested that the closed hydronephrosis was only secondarily infected with tuberculosis.

45. **Ehrlich's "606" in Syphilis.**—Fischer states that Buschke, to whom he is assistant, declares that his extensive experience with the new remedy in the dermatologic department of the Rudolf Virchow hospital at Berlin has convinced him that it should be reserved exclusively for patients refractory to mercury. He has also encountered a few patients refractory to "606," and prolonged observation is showing that even when the primary manifestations have subsided under its influence, general symptoms are liable to develop later. The lesions which subside so rapidly under the "606," he continues, are the kinds which promptly subside under any

method of treatment or without it, the indurated chancres being more slowly influenced. In one such case the chancre was found nearly the same size and swarming with spirochetes two months after the injection of the usual dose of "606," while the patient has been tormented since with extremely frequent and severe colic pains, never observed before, and which Buschke ascribes to the arsenic. He says that no one seems to appreciate how rapidly syphilids may subside under ordinary treatment; clinicians are surprised by the rapidity of the action of the "606" when, if they will keep records of the cases in which mercury alone was used, they will frequently find that the syphilids disappear as fast or even faster under mercury. In a recent case a much debilitated man had numerous syphilitic ulcerations over his body, especially on the legs, with papulous syphilids on the back, and positive Wassermann reaction. Under salves and baths the ulcerations all healed over in twelve days and then mercury was commenced, under which the papulous syphilids soon healed. The man gained six pounds in the three weeks. The tonic effects of the care and food in the hospitals have often an amazingly favorable action on the general health without any drugs or under mercurial treatment. But the "606" has displayed great efficacy in the severe and extensive syphilis refractory to mercury, and this seems to be the special field of the new drug, although it may fail even here, as in a case Fischer has previously reported.

Syphilis of the central nervous system also seems in certain cases to be amenable to the new drug, but special caution is required here as cases have been reported in which no benefit or actual harm has followed its use; even fatalities have been reported. On the other hand, calomel renders good service in these cases, especially in the recent cases. Recurrences after "606" have been frequently reported but the question now is as to whether the recurrences are exceptionally mild or not. In four cases in Fischer's experience the recurrences were unusually early and unusually intense; in one case the symptoms indicated meningeal irritation. In a fifth case the symptoms suggested arsenic intoxication but they might have been explained by some incipient syphilitic cerebrospinal trouble, but other symptoms suggested hysteria and an epileptiform seizure and weakness of the right leg further complicated matters in respect to the share of the "606" in the syndrome. No methyl alcohol had been used in injecting the "606;" Rille and Spiethoff have also reported epileptiform seizures after its injection. In five other cases in which "606" had been injected on account of skin lesions, recurrence was observed taking the form of serious specific iritis in four and of neurochorioretinitis in the other. He knows of a number of similar cases observed by others, the recurring manifestations developing in the eyes. There was no predisposition on the part of the eyes in any of these five cases, ophthalmologic examination before the injection of "606" having shown normal conditions. He thinks that the new remedy probably has a special affinity for nerve tissue, and although it does not directly injure the nerve, like atoxyl and arsacetin, yet it provides a place of lessened resistance and here the syphilitic virus preferably locates—a syphilis *ex trauma*.

Rille and Pinkus have recently reported three cases of jaundice following administration of "606." The local necrosis sometimes observed is evidently of purely chemical nature; it is exceptionally torpid, and operative removal of the necrotic tissue is practically impossible as the necrosis goes very deep, the chemical action extending far into the interstices in the tissues. The breast is a particularly unfavorable point for the injection on this account; in one patient the necrosis in the breast extends down and into the ribs and there is danger of perforation of the pleura. Only a part of the arsenic seems to be taken up into the tissues; the rest is slowly, possibly intermittently eliminated, and these factors vary in different individuals so that it is unusually difficult to determine the tolerated dose. Fully as good therapeutic results have been observed with small as with large doses. Alt and Hoffmann have reported severe symptoms on the part of the heart after the injection of the new drug, and Fischer reports another grave case of the kind. The patient was a young man, healthy until infected with syphilis early in 1910.

Münchener medizinische Wochenschrift

November 1, LVII, No. 44, pp. 2273-2328

47 *Varying Resisting Powers of Bacteria. R. Stern.
48 *Influence of Various Diseases on the v. Pirquet Tuberculin Reaction. F. Rolly.
49 *Action of Lime. (Wirkung des Kalkes.) H. H. Meyer.
50 *Abrupt Fluctuations in Blood Pressure and Their Causes. Zabel.
51 *Transverse Laparotomy Incision. (Anwendungsgebiet des Pfannenstielschen Faszienquerschnittes.) R. T. Jaschke.
52 Hemochromogen Crystals in Forensic Tests for Blood. Methling.
53 Experimental Research on Otogenous Pyemia. L. Haymann.
54 Ehrlich's "606" in Filariasis. V. Reichmann.
55 Fracture of Epicondyle of the Humerus. P. Glaessner and Milavec.
56 Supernumerary Mammæ. (Polythelie und Achselhöhlenmilchdrüsen.) R. Hofstätter.
57 Cure of Exophthalmic Goiter Syndrome by Cauterizing Points in Nasal Mucosa. R. Hoffmann.
58 Pathogenicity of Ameba of Dysentery. Y. Tanaka.
59 *Suicide Under Influence of Paratyphoid Infection. (Selbstmord durch Halsschnittwunde bei Paratyphus.) M. Mayer.

47. **Fluctuations in the Resisting Power of Bacteria.**—Stern remarks that the changes in the body during the course of an infection have been well studied, but not much is known of the changes which the invading bacteria themselves undergo in the course of the infection. His research seems to show that the ability of the bacteria to withstand the defensive reactions of the body varies widely at different times and under different conditions. Typhoid bacilli, for example, cultivated directly from the blood of a typhoid patient are sometimes unaffected by the usually bactericidal blood-serum, while the same strain cultivated through a few generations outside of the body is rapidly destroyed by the serum. This fact explains the varying action of different bactericidal serums: they prove effectual on animals—the animals being inoculated with artificially cultivated bacteria—while in man the same serum is liable to prove inactive against the invading bacteria as they have acquired resisting powers in the course of the disease process they have set up in their host. For example, if 30 grains of hexamethylenamin are given in one dose to a healthy individual, his urine kills in a few hours typhoid bacilli added to it outside. This also occurs with urine from certain persons with bacteriuria, cystitis or pyelitis, but in other cases in this same category the urine does not acquire any bactericidal property even under a prolonged course of large doses of the drug. This occurred in three out of eleven cases of cystitis and pyelitis in his experience. It is possible that the diseased mucosa secretes some substance which acts on the bacteria, rendering them hardier.

48. **Influencing of the v. Pirquet Tuberculin Reaction by Various Diseases.**—Rolly reports experiences showing that in the course of various infectious diseases the tuberculin skin test may elicit a negative changing to a positive reaction during convalescence even in the absence of tuberculosis. He presents arguments to show that this is due not to some general immunity process but rather to local modifications in the skin itself.

49. **Clinical Importance of Lime.**—Meyer has been studying in various ways the action of lime in the organism, and states that one of the best ways to obtain an insight into the action of a certain element in the protoplasm is to study what happens when this element is rendered inactive. This can be done in respect to lime by giving oxalic acid, which seems to draw the lime out of the tissues or else to bind it or in some other way to render it inactive or nullify its action. Januschke has found that experimental oxalate intoxication—not only the toxic paralysis of the heart but also general intoxication—can be arrested by administration of lime or strontium salts. This does not occur when barium salts are given although the latter are able to bind the oxalates *in vitro* as effectually as the lime salts. The effect is due not to the binding of the oxalate but to the supplying of the tissues anew with lime to replace that which has been drawn out of them by the oxalic acid. In every intoxication from an acid the lime is drawn out of the tissues, he asserts, and the lime content of the blood increases. Among the symptoms of oxalic acid intoxication are salivation, alternate maximal dilatation and contraction of the pupil and alternations of a very high and very low blood-pressure—all suggesting increased irritability on the part of the nervous system from partial loss of the

lime content of the nerve tissue. This assumption is confirmed by the increased sensitiveness to suprarenal extract of the organs innervated by the sympathetic system, as well as by the subsidence of the symptoms under administration of lime. Another phase of the physiologic action of lime has been shown by the different behavior in respect to exudates and transudates when animals are given lime. The effusions and edematous transudates observed in animals after inoculation with diphtheria toxin, mustard oil, etc., do not occur in animals previously treated with lime salts. This suggests that the increased proportion of lime in the body has rendered the vessel walls less permeable. This assumption is further confirmed by the experiences with experimental exanthems with effusion, easily induced in the non-treated animals but failing to develop in the animals previously given lime. Wright ascribes this to increased coagulability of the blood under the influence of the lime salt, but Meyer thinks that it is much more likely to be the result of changes in the walls of the vessels of the skin. The same explanation applies also to diarrhea, the result of abnormal permeability of the intestinal vessels. The research reported supplies a physiologic foundation for the sedative action of lime on the organic nervous system and for the correction of the tendency to effusions and transudates by lime salts rendering the vessel walls less permeable.

50. **Fluctuations in the Blood-Pressure.**—Zabel has found that the blood-pressure even in the healthy fluctuates within a wide range from apparently insignificant causes. Stimuli of all kinds are liable to raise or depress the blood-pressure temporarily. Certain persons are more instable in this respect than others, and the variations in the blood pressure are liable to mislead in diagnosing unless the possibility of these fluctuations is borne in mind. The lowest average pressure in fifty measurements on the same individual under like conditions supplies a reliable standard—the pressure measurements taken first vary widely.

51. **Advantages of the Transverse Laparotomy Incision.**—Jaschke concludes from experience with the Pfannenstiel transverse incision in over 1,000 cases that the ultimate outcome is much better with this than with the longitudinal incision, even in cases with dubious asepsis. The tendency to postoperative hernia is less, the patients are able to be up earlier and the scar is less prominent. Button sutures are preferable as infection, if it occurs, remains localized to the one suture instead of running along the continuous suture. It should be fine and the superficial sutures or clips should be removed early; when the lips are not adhering by the fourth or sixth day, primary healing need not be anticipated and clips too close together and left too long may impede the escape of secretions.

59. **Paratyphoid Simulating Criminal Poisoning.**—Mayer reports a case in which a man cut his throat after a brief period of vomiting and diarrhea, and the family circumstances, involving property, suggested criminal poisoning that had induced mania. Necropsy revealed merely an early stage of paratyphoid infection. He has encountered three other cases of incessant cholera-like vomiting and diarrhea fatal in two days for which paratyphoid infection was responsible. A small epidemic of similar cases occurred at Kotbus in 1905. The enormous loss of fluids exhausts the patients to such an extent that the assumption of acute poisoning is almost inevitable, especially as the mind is not affected as with typhoid.

Wiener klinische Wochenschrift, Vienna

November 3, XXIII, No 44, pp 1547-1582

60 Anatomy and Clinic. J Tandler
61 Cultivation and Agglutination of and Toxin Formation by Cholera Vibrios. R Kraus and F Muller
62 *Ehrlich's "606" in Syphilis. F Bardachzi and E Klausner
63 The Meiostagmin Reaction. F Micheli and F. Cattoretti
64 Histochemical Determination of Peroxydase. R Fischel

62. **Action of Ehrlich's "606" on the Blood.**—Bardachzi and Klausner found an increased proportion of urobilin in the urine after injection of the "606" in a number of patients, but the most striking effect was a remarkable transient increase or decrease in the red blood-corpuscles which was regularly observed in the patients whose blood was examined. The number of reds varied by nearly or over 1,000,000 in the seven cases cited, running from 5,750,000 up to 7,300,000 in one case in twenty-four hours and dropping from 4,800,000 to 3,800,000 by the evening of the day of the injection in another case.

Zentralblatt für Chirurgie, Leipsic

November 5, XXXVII, No 45, pp. 1441-1464

65 *Plastic Operation for Cure of Trapezius Paralysis (Funktionelle Heilung der Cucullarislahmung mittels freier Fascienplastik.) O Rothschild
66 *Resection of Stomach and Colon (Zur Magen-Kolonresektion.) R Goebell

65. **Fascia Transplantation in Treatment of Paralysis of the Trapezius.**—Rothschild reports a case in which he realized a complete functional cure of severe paralysis of the right trapezius by a free plastic operation. The paralysis was the result of injury six months before and the patient was unable to use the arm at all, but in ten days after the operation neither the patient nor the physician was able to detect any functional difference between the use of the injured and the sound arm and the cosmetic result was equally good. The scapula is a little farther from the spine than its mate, but the two are level and the inner margin is parallel to the spine. This was accomplished by cutting a flap from the wide dense sheath of the chief muscle of the thigh, about 20 cm. long by 4 or 5 cm wide, and suturing the narrower end to the inner margin of the scapula above its spine, and then, as the scapula was forced towards the spine and downward by an assistant, the other end of the flap of fascia, drawn taut, was fastened to the latissimus dorsi and the lower longissimus, close to the spine. The fascia pulled on the scapula with such force that the latter was drawn up to a level with its mate, and its inner margin ran parallel with the spine. In order to leave the scapula some freedom of motion, the flap was sutured to the muscles which yield a little, rather than to the vertebræ, for the inner point of fixation. The end sutured to the scapula was made purposely narrow so as not to interfere with the normal twisting of the scapula in certain movements. In order to prevent the growing of the fascia to the skin, he passed the flap through a slit in the trapezius and let it run under the longissimus dorsi. The strong traction and the eccentric insertion of the flap of fascia leave the scapula practically as free as when it was under the control of the trapezius.

66. **Resection of Stomach and Colon.**—In the case reported, the cecum, ascending colon and its flexure were totally excluded after resection of the stomach and appendicostomy. The operation was done for carcinoma and the patient left the hospital in good condition.

Zentralblatt fur Gynakologie, Leipsic

November 5, XXXIV, No 45, pp 1441-1480

67 Obstetric Nomenclature (Zur Nomenklatur in der Geburtshilfe.) M Neu
68 Operative Treatment and Prophylaxis of Genital Prolapse (Einiges uber den Gewinn fur die gewohnliche Plastik aus der modernen Gestaltung der Prolapsoperationen.) H Sellheim

Gazzetta degli Ospedali e delle Cliniche, Milan

October 30, XXXI, No 130, pp 1369-1384

69 Typhoid Bacilli as Antigen in Experimental Research (Comportarsi del potere agglutinante e del potere battericida del siero di sangue in seguito ad iniezioni di germi tifici vivi, attenuati ed uccisi.) C Quadrone

November 1, No 131, pp 1385-1392

70 Two Cases of Small Pox Simulating Measles (Esantema vaiuoloso simulante il morbillo.) A Montefusco

Hygiea, Stockholm

October, LXXII, No 10, pp 1041-1148

71 Infection Promoting Action of Lens Substance (Om ogats skydd mot infektion i framre kammaren och om infektions befordrande verkningar hos linssubstansen.) C Lindhal
72 Modification of Almen's Qualitative Test for Sugar in the Urine (Om kvalitativ bestamning af socker i urin.) G Bohmansson

Ugeskrift for Læger, Copenhagen

October 13, LXXII, No 41, pp 1219-1268

73 Multiple Mucocele (Mucocele af Pandehulen og Sibenscellerne.) E Schmiegelow
74 *Diagnosis of Tuberculosis in Infants (Bidrag til Lungetuberkulosens tidlige Klinik II.) C. A. Blume. Commenced in No 40

October 20, No. 42, pp. 1269-1298

75 Alleged Remedies for Diabetes. (Undersøgelse af et Arkanum mod Sukkersyge.) M. Lauritzen.

October 27, No. 43, pp. 1299-1332

76 Passage of Drugs, etc., into the Cerebrospinal Fluid. (Overgang af Medikamenter og andre Stoffer i Cerebrospinalvædsken.) P. T. Hald.

77 *Therapeutic Inhalation of Oxygen. (Iltinhalation.) Tøndering. Commenced in No. 42.

74. **Tubercle Bacilli in Mucus from Infants' Larynx.**—Blume's method of obtaining mucus from the larynx as an aid to the diagnosis of tuberculosis was mentioned in The Journal, Aug. 21, 1909, page 664, with instances of valuable information thus obtained which had escaped all other means of investigation. He here reports the application of the method to very young infants long before any of the tuberculin skin reactions could be elicited and before expectoration was possible. It is easier to obtain the mucus from the larynx of an infant than from an adult. The child gags as the index finger of the gloved left hand is introduced far back into the mouth; it is then easy to wipe up cautiously a scrap of mucus from the larynx with the cotton swab. In six cases reported in detail in hygienic, wealthy homes or in an institution, the suspicion of possible contact infection was confirmed by the finding of tubercle bacilli in the mucus, in one case only twenty-eight days after birth. He expatiates on the importance of an early diagnosis, citing Neisser's practice of testing with tuberculin all his lupus patients since he witnessed extensive tissue destruction and blindness in a mother and daughter in the course of supposed lupus, which later proved to be of syphilitic origin. Pontoppidan has also published cases of tuberculous meningitis in adults which were incorrectly treated on the assumption of delirium tremens. Liebermeister also obtained positive results in inoculation of guinea-pigs in three out of five cases of supposed alcoholic neuritis. Blume also reaffirms the extreme importance of the amount of tuberculous virus with which the individual is infected, suggesting that infants alone are able to contract infection from the mild cases, while adults escape. He also discusses further Nature's "beneficent vaccination," to which some ascribe the modification of the course of tuberculosis in recent decades, as in Denmark, for example, where tuberculosis is far more prevalent now than it was up to 1870, while the mortality has reached the lowest recorded percentage, pulmonary phthisis growing rarer every year. He does not believe that we have Nature to thank for this. "Nature," he says, "is a poor vaccinator; her vaccine-virus is more virus than vaccine." If it were otherwise, and if all were properly vaccinated by Nature in early childhood, then the tuberculin reactions would be growing less frequent among adults, while in reality the opposite is the case.

77. **Therapeutic Inhalation of Oxygen.**—Tøndering tabulates the details of forty-five cases of asthma with or without pulmonary emphysema, of chronic bronchitis, neurasthenia with insomnia or simple anemia, in which marked improvement was realized under treatment by inhalation of oxygen in all but two instances, and no harm resulted in any case. The oxygen was inhaled at first for twenty minutes a day and after a week or so was combined in some cases with instrumental artificial respiration.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Tifo Experimental en los Monos Inferiores (Cuarta Nota): Inmunidad Conferida por Inyección de Sangre Calentada á 55° Centigrados. Sensibilidad al Tifo, de los Monos de la Especie *Mycetes villosus*. Tifo Experimental en los Monos Inferiores (Tercera Nota): Ineficacia del Atoxil. Destrucción del Virus por Calefacción á 55° Centigrados. By A. Gaviña and Girard, del Instituto Bacteriologico Nacional de Mexico. Publicaciones del Instituto Bacteriologico Nacional. Paper. Pp. 7 each. Mexico: Imprenta de Ignacio Escalante, 1910.

Nota Preliminar sobre el Tifo Experimental en los Monos Inferiores (Num. 1): Nota Preliminar sobre Ciertos Cuerpos Encontrados en la Sangre de los Individuos Atacados de Tifo. Tabardillo (Num. 2): Segunda Nota sobre el Tifo Exantematico en los Monos Inferiores, Ateles-Vellerosus, Inmunidad Conferida por un Primer Ataque.—Resistencia del Virus á la calefacción (Num. 3). By A. Gaviño and J. Girard, del Instituto Bacteriologico Nacional de Mexico. Publicaciones del Instituto Bacteriologico Nacional. Paper. Pp. 36. 1910.

Anæmia. By Obermedizinalrat Professor Dr. P. Ehrlich, Director of the Königl. Institut, für Experimentelle Therapie, Frankfurt a.-M., and Dr. A. Lazarus, Professor of the University of Berlin, Charlottenburg. Part I Vol. I. Normal and Pathologic Histology of the Blood. Second Edition, Revised by Dr. A. Lazarus, and Dr. O. Naegeli, Privatdocent, Zurich. Translated from the German by H. W. Armit, M.R.C.S. Cloth. Price, $4. Pp. 218, with illustrations. New York: Rebman Co., 1910.

Manual of Clinical Pathology. For the General Medical Practitioner. Comprising the Examination of Urine, Stomach Contents, *Feces*, Blood, and the Serum Diagnosis *of Syphilis, Tuberculosis*, Typhoid Fever, etc. By Richard Weiss, Ph.D. In Collaboration with George Herschell, M.D., London, and Andrew Charles, F.R.C.S., Dublin. Paper. Price, 2 shillings Pp. 72, with illustrations. London: J. & A. Churchill, 7 Great Marlborough St., 1910.

Urgent Surgery. By Félix Lejars, *Professeur Agrégé à la Faculté de Médecine de Paris*. Translated from the Sixth French Edition by William S. Dickie, F.R.C.S., Surgeon North Riding Infirmary, Middlesbrough. Vol. II. The Genito-Urinary Organs—the Rectum and Anus—the Strangulated Hernias—the Extremities. Cloth. Price, $7 net. Pp. 580, with 536 illustrations. New York: William Wood & Co., 1910.

Hints for the General Practitioner in Rhinology and Laryngology. By Dr. Johann Fein, Privatdocent at the University of Vienna. Translated by J. Bowring Horgan, M.B., Late House Surgeon at the Hospital for Diseases of the Throat, Golden Square, London, W. Cloth. Price, $1.50. Pp. 223, with 42 illustrations. New York: Rebman Co., 1910.

Bacon Is Shake-Speare. By Sir Edwin Durning-Lawrence, B.A. Together with a Reprint of Bacon's Promus of Formularies and Elegancies Collated, with the Original MS. by the late F. B. Bickley, and Revised by F. A. Herbert, of the British Museum. Cloth. Price, $1 net. Pp. 286, with illustrations. New York: The John McBride Co., 1910.

The Mental Symptoms of Brain Disease. An Aid to the Surgical Treatment of Insanity, Due to Injury, Hemorrhage, Tumors and Other Circumscribed Lesions of the Brain. By Bernard Hollander, M.D. With Preface by Dr. Jul. Morel, Late Belgian State Commissioner in Lunacy. Cloth. Price, $2. Pp. 237. New York: Rebman Co., 1910.

Gehirn und Rückenmark. Leitfaden für das Studium der Morphologie und des Faserverlaufs. Von Dr. med. Emil Villiger, Privatdozent für Neurologie und Neuropathologie an der Universität Basel. Second Edition. Cloth. Price, 12.80 marks. 'Pp. 278, with 224 illustrations. Leipzig: Wilhelm Engelmann, 1910.

Fréquence de la Tuberculose Parmi la Population de Kiruna [Lapland]. Par Gustaf Neander. Questions Sociales Hygiéniques. Examens Scientifiques et Pratiques en Laponie, Organisés par la Société Luossavaara-Kirunavaara. Paper. Pp. 38, with illustrations. Stockholm: Nordiska Bokhandeln.

Physical Chemistry: Its Bearing on Biology and Medicine. By James C. Philip, Ph.D., Assistant Professor in the Department of Chemistry, Imperial College of Science and Technology, London. Cloth. Price, $2.10 net. Pp. 312, with 23 illustrations. New York: Longmans, Green & Co., 1910.

Le Tronc Cœliaque. Par Pierre Descomps, Prosecteur des Hôpitaux. Travail de l'Amphitheatre d'Anatomie des Hôpitaux. Recherches d'Anatomie Chirurgicale sur les Artères de l'Abdomen. Cloth. Price, 10 francs. Pp. 205, with 97 illustrations. Paris: G. Steinheil, 1910.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M.D., Clinical Professor of Otology in the Medico-Chirurgical College. Second Edition. Leather. Price, $2.50 net. Pp. 563, with 228 illustrations. Philadelphia: W. B. Saunders Co., 1910.

The Hygiene of Infancy and Childhood and the Underlying Factors of Disease. By A. Dingwall Fordyce, M.D., Extra Physician, Royal Hospital for Sick Children, Edinburgh. Cloth. Price, $2.50 net. Pp. 289. New York: William Wood & Co., 1910.

The Prevention of Sexual Diseases. By Victor G. Vecki, M.D., ex-President San Francisco German Medical Society. With Introduction by William J. Robinson, M.D. Cloth. Price, $1.50. Pp. 132. New York: The Critic and Guide Co., 1910.

The Prescribing of Spectacles. By Archibald Stanley Percival, M.B., Senior Surgeon Northumberland and Durham Eye Infirmary. Cloth. Price, $2 net. Pp. 159, with 24 illustrations. New York: William Wood & Co., 1910.

Phases of Evolution and Heredity. By David B. Hart, M.D., Lecturer on Midwifery and Diseases of Women, School of the Royal Colleges, Edinburgh. Cloth. Price, $2. Pp. 259. New York: Rebman Co., 1910.

A Practical Guide to the Newer Remedies. By J. M. Fortescue-Brickdale, M.D., Physician to Clifton College. Cloth. Price, $2 net. Pp. 273. New York: William Wood & Co., 1910.

Fourth Biennial Report of the State Hospital for Epileptics, Parsons, Kan. For the Two Years Ending June 30, 1910. Paper. Pp. 49, with illustrations. 1910.

The Modern Treatment of Alcoholism and Drug Narcotism. By C. A. McBride, M.D. Cloth. Price, $2. Pp. 376. New York: Rebman Co., 1910.

The Wellcome Photographic Exposure Record and Diary. 1911. Cloth. Pp. 271. Price, 50 cents. New York: Burroughs Wellcome & Co.

The Journal of the American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV, No. 25 Chicago, Illinois December 17, 1910

METABOLISM IN DIABETES*

GRAHAM LUSK
NEW YORK

"When Bernard had completed his lectures in the winter term of 1854-55, few questions in physiology were apparently more completely settled than that of the glycogenic function of the liver. The consequences of this doctrine were of the utmost importance, for, once settled that sugar is the product of animal as well as vegetable organisms and that an organ can be found which is singly concerned in its production, we would have at once in the exaggerated performance of a normal function, the proximate cause of diabetes. There had been from the first no lack of opposition to Bernard's views, but so skilfully had he defended his position that, at the time of which we make mention the very objections of his critics had only served to increase, in the eyes of the candid, the magnitude of his triumph."

These were the opening words of an article on "The Origin of Diabetes with Some New Experiments Regarding the Glycogenic Function of the Liver," read before the Medical Society of the County of New York forty years ago by my father,[1] then professor of physiology at the Long Island Medical College. The paper controverted the stand taken by Pavy, and held by him to this day—that the conversion of glycogen into sugar is a post-mortem phenomenon. The paper showed that blood drawn by a catheter from the right heart of a resting dog which had been fed on meat was four times richer in blood-sugar than that contained in the jugular vein, and from this it was inferred that the hepatic vein was carrying sugar into the venous system. The discussion which followed the reading of the paper was opened by Dr. Austin Flint, Sr., who stated that he had two diabetic patients in whom regulation of the diet had been the only and successful treatment. Dr. Austin Flint, Jr., then described experiments he had made on the glycogenic function of the liver and gave a lucid interpretation of them.

I have made mention of this scene to illustrate how forty years ago in New York City the spirit of research was active in the lives of two young men then about thirty years old, while the older master of medicine stood by in sympathetic encouragement. It is thus that the science of medicine is developed, and that young men who subject themselves to like discipline become powerful.

In this paper of my father is noted the fact that other organs besides the liver might be involved in diabetes, and indeed in one case which he had examined the only lesion he could discover was calcareous degeneration of the pancreas.

In 1889 von Mering and Minkowski extirpated the pancreas of dogs and produced in them a so-called "total diabetes" which bears striking resemblance to human diabetes. Dogs with pancreas diabetes cannot oxidize dextrose when given; dextrose is produced from protein so that 2.8 gm. of dextrose appear in the urine for each gram of nitrogen; there is acidosis with the appearance of beta-oxybutyric acid in the urine; there is emaciation and finally death in coma. Minkowski maintains that disease of the pancreas is the cause of diabetes mellitus. Lépine's suggestion that the pancreas manufactures a ferment which, passing to the blood-stream, *effects the oxidation of dextrose within the cells of the* normal organism, gave a simple though by no means proved explanation of the influence of the pancreas over carbohydrate metabolism. Cohnheim's explanation that the pancreas furnishes a "kinase" or activator which influences a second glycolytic ferment, is an elaboration of Lépine's idea.

The influence on diabetes of glands other than the pancreas has recently attracted considerable attention, but the results obtained by different experimenters have been so conflicting that considerable doubt exists as to whether they have any action at all.

In work on a diabetic patient, a medical student under strict control, Arthur Mandel and I found on a meat-fat diet that 3.65 gm. of dextrose appeared in the urine for every gram of nitrogen present there, and this was a relationship which I had for many years obtained in phlorhizin-glycosuria in dogs. This relationship between the dextrose and the nitrogen in the urine, the so-called D:N ratio, is a matter of considerable importance in the modern literature of diabetes. All those present remember from their early instruction in physiology that the appearance of 1 gm. of nitrogen in the urine corresponds to a destruction of 6.25 gm. of protein in the organism. On the basis of the experiments on the diabetic medical student we can therefore establish the following equation:

6.25 gm. protein = 3.65 gm. dextrose = 1 gm. nitrogen.

In other words, protein yields nearly 60 per cent. of itself as sugar. This relationship was constant, no matter how much protein was given, and was in no way dependent on variations in the amount of fat ingested. I am fully aware that authorities for whom I have a profound respect proclaim that fat may be converted into sugar in the metabolism of the diabetic, and to such assertions I can only reply that I have never seen any evidence of it.

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* Read in the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

[1] Lusk, W. T.: New York Med. Jour., 1870, xi, 506; discussion on p. 565.

Regarding the origin of sugar from protein, it is certain that it does not arise from sugar pre-existing in the protein molecule. Protein is made up of many nitrogen-containing organic acids. When these are broken up in metabolism they yield ammonia, which unites with carbon dioxid to form ammonium carbonate and is carried by the blood to the liver and there converted into urea. Some of the organic acids which have lost their nitrogen are carried to the liver and are there converted wholly or in part into dextrose. Such an organic acid which arises from protein after this fashion is lactic acid, which when carried to the liver is synthesized to dextrose. This illustrates the principle of sugar production from protein.

Our patient, the medical student previously referred to, had no tolerance for carbohydrate. His sugar output approximated N grams in urine × 3.65 + carbohydrate ingested. That is to say, the urine of one day during which he had received a diet of meat and fat and 185 gm. carbohydrates amounted to 2,870 c.c., containing 217 gm. or 7.5 per cent. of sugar derived as follows:

17.8 gm. N × 3.65 gm. = 65 gm. dextrose from protein + 152 gm. extra dextrose.

And then two days later on a diet of meat and fat and only 5.5 gm. of carbohydrate, the urine amounted to 2,275 c.c., containing 92.6 gm. or 4 per cent. of dextrose derived as follows:

24 gm. N × 3.65 = 87.6 gm. dextrose from protein + 5 gm. extra dextrose.

The condition of the patient was the same on both of these days and yet how different the quantity of dextrose voided, and how different the percentage of sugar!

The figures show how utterly fallacious is the customary habit of the clinician in estimating the intensity of diabetes in accordance with the percentage of sugar contained in a twenty-four-hour sample of urine. And yet my own students, who should know better talk to me about a "2-per-cent. urine," and then suddenly realizing the situation look at me with a sheepish countenance. There are others who draw conclusions of disturbed protein metabolism from a knowledge of the number of grains of urea in an ounce of urine, without realizing that this is of no more importance than a knowledge of the number of ten-penny nails to the ounce of nails.

No, the intensity of diabetes should not be determined by the percentage of sugar in the urine, but by the relationship between the in-go of sugar plus the possible maximum of sugar production from protein as compared with the total output of sugar. This may be illustrated in the following formula modified from that given by Falta.[2]

$$\frac{\text{Output of dextrose}}{\text{Urine N} \times 3.65 + \text{food-dextrose}}$$

This multiplied by 100 gives Falta's "coefficient of excretion," or the per cent. of sugar eliminated.

In other words, recognition must be given to the fact that the output of dextrose is dependent on the amount of carbohydrate ingested and also on the height of the protein metabolism.

In diabetes the protein metabolism is higher than under normal conditions. This is because the oxidation of carbohydrates normally reduces the quantity of protein metabolized in the body. This is generally recognized as a fundamental fact of nutrition. The recent literature has contained examples of nitrogen equilibrium maintained on diets containing only 8 and 10 gm. of nitrogen, and such a low protein diet has found its advocates.

It may well be that 10 gm. of protein in the diet of an already emaciated diabetic may be sufficient to maintain him in nitrogen equilibrium in the reduced protein condition in which he finds himself, but this does not by any means invalidate the general principle that *the diabetic organism cut off from the ability to oxidize carbohydrates requires more protein food than the normal organism.*

There is a second phase of disturbance in the metabolism of the diabetic, and this is an imperfect oxidation of fat. Theoretically each fatty acid contained in fat and some of the oxy-acids produced when protein breaks up may yield a molecule of beta-oxybutyric acid. The diabetic organism thrown as it is on its fat-burning ability to support its life may find its capacity in this direction also curtailed. Under these circumstances beta-oxybutyric acid, acetone and aceto-acetic acid appear in the urine. This is the cause of diabetic acidosis. The urine runs high in ammonia, withdrawn to neutralize the acids formed. Alkali may also be taken from the body for the same purpose. It was Friedrich Müller who first drew attention to the fact that the percentage of ammonia in the urine had little significance, whereas the number of grams eliminated daily was an approximate measure of the intensity of the acidosis. He stated that the normal elimination of ammonia varied between 0.3 to 1.0 gm., but in diabetes reached 2, 6 and even 12 gm. in twenty-four hours. Klein and Moritz[3] have recently shown that ammonia and fixed alkali normally serve one and the same purpose, i. e., the neutralization of acids which are being eliminated. These acids are organic acids and inorganic phosphates. They find that large amounts of sodium bicarbonate given to normal persons may reduce the quantity of ammonia in the urine to almost nothing. Such a urine, while alkaline to litmus, is acid to phenolphthalein, the excess of alkali appearing as sodium bicarbonate and as secondary phosphate. They also find that increased ingestion of fat results in the elimination of alkali from the body on the day following the fat administration, a result they explain as being due to the necessities of fat metabolism. From this it may be concluded that administration of sodium bicarbonate in diabetes prevents the withdrawal of alkali from the body in the preliminary formation of soaps in the intestine, and secondly, promotes the elimination of the acids formed in metabolism.

Reviewing the ground traversed, one appreciates that one is dealing in total diabetes with an organism with no carbohydrate metabolism, with a high protein metabolism, with a more or less pathologic fat metabolism, with an organism requiring sodium bicarbonate and also abnormal quantities of water in order to dissolve the unoxidized products formed.

It seems passing strange that with all the wealth of modern chemistry no compound is known which will replace dextrose in metabolism.

A final question is whether the heat production is less in diabetes than in health. It can now be positively stated that there is no diminution in the total energy production of the diabetic as compared with the normal man. The diabetic obtains his calorific energy from fat instead of from carbohydrates, and if fat is not given him in sufficient quantity to maintain his requirement he uses his own body fat.

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[2] Falta, W.: The Therapy of Diabetes Mellitus, Arch. Int. Med., 1909, p. 159.

[3] Klein and Moritz: Deutsch. Arch. f. klin. Med., 1910, xcix, 162.

Pettenkofer and Voit in early experiments on a diabetic found no change in the metabolism from the normal. Rubner, using a phlorhizinized dog, found that the heat production was increased by 7 per cent. when glycosuria was induced. The protein metabolism was increased more than threefold, and he attributed the rise in energy production to the increased protein destruction (specific dynamic action of protein). Falta,[4] working with Benedict in Boston, could find no evidence of an increased metabolism in diabetes mellitus. Du Bois and Veeder[5] report a comparison between the metabolism of a normal man and two men suffering from diabetes. One case, which was of the most severe type of diabetes, showed an increase in metabolism of 5 per cent. above the normal. Finally, a preliminary report by F. G. Benedict and E. P. Joslin of work on the metabolism of thirteen patients representing various types of diabetes, declares that the heat production of the diabetic may be 15 per cent. above the normal. Zuntz attributes this rise in metabolism to increased renal activity.

One must take to heart these lessons. The physician can be sure that he is treating his patient properly only when he knows that he is giving him at least the thirty-five calories per kilogram required normally, and these must be contained in materials which the patient can oxidize. Protein will not give more than 10 or 15 per cent. of this requirement of energy. To give fat in sufficient quantity requires all the arts of cookery. Here, as always, when the appetite is no longer a proper guide the physician's knowledge of the patient's requirement is the only possible resource. When instinct fails science must be invoked.

RECENT ADVANCES IN THE TREATMENT OF DIABETES MELLITUS *

GEORGE B. WALLACE, M.D.
NEW YORK

In spite of all the experimental and clinical work on diabetes which has been done in the past years, a specific or etiologic treatment has not been attained. A striking advance has been made in dietetic treatment, however, and, with the clearer and more detailed knowledge of the metabolic derangement present, gained in the past few years, the general principles of dietetic therapy have undergone considerable modification and have been placed on a firmer foundation. Much yet remains unknown or obscure, but in no disease of metabolism can truly scientific dietetic treatment be more successfully carried out than in diabetes. It has been made clear, however, that no routine line of treatment, however sound it may be in principle, can be applied to all cases and that the treatment of one individual case may differ quite markedly from that of another. The future will undoubtedly show a more definite classification into groups or types than is at present possible.

Numerous attempts have been and are still being made to discover a specific for diabetes. Naturally this work centers in the preparation of glandular extracts, and although so far no success has been attained, some of the work may be briefly mentioned.

In 1907 Rennie and Fraser[1] prepared an extract of the islands of Langerhans of the pancreas of a certain genus of fish, the Teleosts. In these pancreas there is a chief island, large enough to be seen macroscopically. Five diabetic patients were treated with the extract and some improvement seemed to follow. The results have not been confirmed nor have additional cases been since reported by these authors. In the following year a paper by Zuelzer[2] appeared in which were reported six cases treated with pancreas extract. The extract was made from dog's pancreas removed during the height of digestion. It was injected intravenously and the glycosuria diminished perceptibly during the two or three succeeding days. A decrease in the acetonuria was also observed. As a result of the injection fever usually occurred. The figures given by Zuelzer are not very convincing, however, and unfortunately the treatment in the hands of others has been disappointing.

Another line of treatment which attracted some attention was introduced by Moore and Abram[3] in 1906. These investigators failed to find prosecretin in the duodenum of diabetics, and on this basis and the assumption that secretin might increase the internal secretion of the pancreas, employed an acid extract of the duodenal mucous membrane (secretin) in the treatment of a few cases of diabetes. Good results were recorded. Their conclusions were shortly afterwards attacked by Bainbridge[4] who found that prosecretin was usually present in diabetics and that the administration of secretin failed to produce any effect on glycosuria. Bainbridge's work has been confirmed by Foster and others in this country.

In 1908 Minkowski[5] again reported the effects of grafting pancreatic tissue in dogs. The graft, if it secures a sufficient blood-supply, grows and functions to such an extent that the animal's own pancreas can be completely removed without the occurrence of diabetes. Here would seem to be a great therapeutic possibility. But in animal experiments the transplantation must be made before diabetes has been induced, otherwise healing will not take place.

The interesting work of Cohnheim[6] may be mentioned here. Cohnheim found that the glycolysis occurring when an extract of muscle was added to sugar was increased if the further addition of an extract of pancreas be made. The extract of pancreas, he assumes, contains a substance of the nature of a hormone. The objection to his work, on the ground of bacterial contamination, seems to have been successfully met, and Hall,[7] repeating his work, has obtained rather striking results. No attempt has been made by these investigators to apply their work to therapeutics, although it might appear to warrant such application.

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[4] Falta: Wien. klin. Wchnschr., 1909, xxii, No. 16.

[5] DuBois, E. F., and Veeder, B. S.: Arch. Int. Med., 1910, v, 37.

* Read in the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

[1] Rennie and Fraser: Biochem. Journ., 1907, ii, 7.

[2] Zuelzer: Ztschr. f. exper. Path. u. Therap., 1908, v, 306.

[3] Moore and Abram: Biochem. Journ., 1906, i, 28.

[4] Bainbridge: Biochem. Jour., 1908, iii, 82.

[5] Minkowski: Arch. f. exper. Path. u. Pharmakol. (Schmiedeberg Festschr.), 1908, p. 395.

[6] Cohnheim: Ztschr. f. physiol. Chem., 1903, xxxix, 336; xlii, 401.

[7] Hall: Am. Jour. Physiol., 1907, xviii, 283.

A relationship between the function of the pancreas and other glands furnishing an internal secretion, especially the adrenals, has recently been demonstrated, and Eppinger, Falta and Rudinger[8] have assumed that the secretions of the thyroid and adrenals are of mutual aid in affecting metabolic processes, while each of these inhibits the pancreatic function and is in turn inhibited by it. On the basis of this assumption, Bruck[9] has suggested that the serum of an animal deprived of its adrenals will have a beneficial effect in diabetes through lessening the adrenal action, which is excessive on account of the removal or diminution of the pancreatic secretion. Such a line of treatment seems absurd. However interesting and important the knowledge of the relationship between the various internal secretions may be, it offers at present no therapeutic application in diabetes.

There has come a tendency in recent years to a less frequent employment of drugs in diabetes therapy. Alcohol is still used to a large extent in the von Noorden clinic and elsewhere, but von Noorden himself has pointed out that amounts larger than 50 c.c. a day are not to be used. Its food value is of no great importance when taken in this quantity, and it is to be recommended chiefly as an aid to digestion, especially of fat. It would seem here that it is as a rule unnecessary, and while there may be some disadvantage in withdrawing it from those who are accustomed to its use, it must be remembered that diabetics seem especially susceptible to its injurious effects on the various organs of the body. It has been shown too that in some cases, at least, the tolerance for sugar is distinctly lessened by a too free use of alcohol. Neubauer[10] has recently recommended alcohol as a means of warding off diabetic coma and reports cases in which the administration of fairly large doses, up to 135 c.c., has given good results. These doses are too large to be used for any length of time with safety, and, in fact, some other observers have failed to obtain any beneficial effects in this direction.

Considerable interest was aroused in this country by Rudisch's[11] paper on the use of atropin in diabetes. Rudisch finds that atropin, when given in fairly large amounts and in conjunction with dietetic treatment, is of great aid in lessening or preventing glycosuria. In the hands of others, however, it has not been so beneficial, and in a series of experiments I have carried out on depancreatized dogs it produced no effect whatever.

Thus it may be seen that little has been accomplished toward an etiologic or specific therapy and to find any actual progress we must turn to dietetic treatment.

There may be first considered here the question of the energy requirement in diabetes. With the great appetite and marked loss in weight and strength so frequently seen in severe cases it is hardly surprising that the taking of large quantities of food should have seemed a necessity. And in spite of the teaching of those having the largest experience, the idea is still somewhat prevalent that diabetics have a much greater energy requirement and accordingly need a much greater supply of food than normal persons. The following out of this idea has undoubtedly led to considerable injury. The experiments of several investigators have shown that an increased energy requirement does not exist in diabetics. Quite recently a series of experiments carried out in accordance with most approved modern methods has been reported by DuBois and Veeder.[12] They show that the energy requirement in diabetes is approximately 34 calories pro kilogram of body weight per day, which is no greater than that in a healthy man. Diets are generally arranged quantitatively, therefore, with the idea of supplying this amount of energy, due allowance being made for the loss through non-utilization of sugar. Over this point a controversy has arisen. Von Noorden[13] states explicitly that the food-supply of a diabetic must at least be equal to that of a healthy man of the same weight and under the same conditions. If less is taken a loss in weight is sure to occur. On the other hand, the opinion is often expressed that severe cases of diabetes may show a lowered level of energy requirement. Kolisch[14] especially has stated that 25 calories pro kilogram weight may lead to an actual increase in body weight, and that in some cases as little as 20 calories may be taken with no loss in weight. He strongly advises the use of a minimum quantity of food, and claims that this offers the best success in the treatment of severe cases.

In practice it is of course out of the question to determine what is the minimal energy requirement for each case, and the work done in this direction serves chiefly in establishing a principle of treatment. The conclusions which may be safely drawn are that high feeding is injurious, that in some cases of severe diabetes the minimal amount of food which will maintain the body weight brings about the best results, and that an amount equal to that required for a healthy man is generally to be recommended. Starvation days and prolonged periods of low diet are not unattended with danger and are to be prescribed only with due consideration of this.

Another subject of importance concerns the quality or class of food comprising the diet. In mild diabetes certain general principles may be laid down for practically all cases. First, the limit of tolerance for sugar is determined. This is done most easily by gradually increasing the daily amount of bread in the test[15] diet until glycosuria reappears. The patient is then placed on a carbohydrate-free diet for at least two weeks. During this time the sugar tolerance will gradually increase and the hyperglycemia, which very frequently persists for some time after the urine is free of sugar, disappears. It is very rarely that acidosis of any dangerous degree occurs during this period. A mixed diet is now given and the new degree of sugar tolerance determined as before. In many cases it will be found that the tolerance approaches the normal; in others it may show only a slight increase, if any. In all cases, however, the subsequent diet should be such that the urine remains sugar-free and there should come at least once in three months a period of carbohydrate-free diet lasting one or two weeks. This treatment may seem quite unnecessary to a patient whose tolerance for sugar has become well-marked, but it should always be enforced.

In severe cases the qualitative arrangement of the diet is of greater importance. It has long been recognized that a glycosuria persisting under a carbohydrate-free diet may be made to disappear if the protein of the food is cut down. Falta, Gigon[16] and others have shown that some patients may have a marked susceptibility to protein; more so, in fact, than to carbohydrate; so that glycosuria may be lessened or at least not increased by cutting down the protein and at the same time adding carbohydrate. The fact is certainly now well established that high protein feeding is not desirable in severe cases. Two hundred grams of cooked meat per day is the maximum allowed by von Noorden and not more than 12 to 15 gm. of nitrogen should appear in the urine. The proteins of eggs and especially of vegetables, are to be preferred to those of meat since they affect the glycosuria less. It is on this account that periods of vegetable feeding are so beneficial.

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[8] Eppinger, Falta and Rudinger: Ztschr. f. klin. Med., 1908, lxvi, 1.

[9] Bruck: Med. Klin., 1908, 1760.

[10] Neubauer: München. med. Wchnschr., 1906, lviii, 791.

[11] Rudisch, J.: The Treatment of Diabetes Mellitus, The Journal A. M. A., Oct. 29, 1909, *p.* 1366.

[12] DuBois, E. F., and Veeder, B. S.: The Total Energy Requirement in Diabetes Mellitus, Arch. Int. Med., 1910, v, 37.

[13] Von Noorden: Handbuch d. Path. d. Stoffwechs., 1907, ii, 46.

[14] Kolisch: Ztschr. f. phys. u. diätet. Therap., 1908, xii.

[15] I employ the standard test diet used in the von Noorden clinic for the determination of the severity of the case. This diet contains 75 grams of white bread. The detailed diet and the method of classifying diabetes into mild and severe forms are described by von Noorden in Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition, E. B. Treat & Co., N. Y., 1905, *part* 7, *p.* 175.

With regard to carbohydrate feeding in severe cases it is well known that most patients do better when one kind of starch is given alone than when several kinds are taken together. This is the basis for the rice, potato and oatmeal treatments. Of these the oatmeal treatment is of greatest importance. The manner of its action is not understood, but the beneficial effects following its use are at times remarkable. All patients are not by any means, however, equally affected. Although it often brings about a decrease in glycosuria and an increase in sugar tolerance, its chief effect is in lessening acidosis. It is to be given alone, i. e., with no other carbohydrate, and in amounts of 250 gm. a day.[17]

Finally with regard to fat feeding, it is known that although the acetone bodies are formed chiefly from fats, their amount is uninfluenced by the amount of fat in the diet unless in enormous quantities. The lower fatty acids in butter should preferably be removed by washing.

Our knowledge concerning acidosis is as yet very incomplete. In a case in which complete sugar intolerance is present, acidosis may be slight. In another with slight glycosuria, the acidosis may be marked. Allard[18] has pointed out that in diabetic dogs the acidosis is not due to a non-utilization of carbohydrate, but probably to a pathologic state of the liver function. It seems established that the condition is not an acidosis in the strict sense, but rather an intoxication due to specific poisons. Of these one at least we know—oxybutyric acid—and we know too that its salts are poisonous. Our efforts in treatment are directed toward preventing the excessive formation of these substances and in hastening their excretion. A strict protein diet increases the acetonuria, but if it can be persisted in an ultimate decrease may often be obtained. So also the addition of carbohydrates to the diet lessens markedly the acidosis, although the glycosuria at once increases. Where coma is threatening, the glycosuria is of course of less importance than the diminution in acidosis. The introduction of periods of vegetable days,[19] and of oatmeal feeding is especially beneficial in persistent acidosis. The action of sodium bicarbonate is chiefly that of increasing the excretion of oxybutyric acid, and one must not be misled by the presence of larger amounts of oxybutyric acid in the urine after its administration. To get the best effects from this salt in severe acidosis it must be given in large amounts, 100 gm. or more a day. Where coma is present it should be given by intravenous injection.

In general the treatment of severe diabetes may be carried out along the following lines. It is as a rule practically impossible to keep the patient's urine sugar-free, and one should early give up the attempt. Since the main danger lies in the acidosis it is unwise to put the patient on a strict diet for any length of time. In the preliminary treatment there comes first a period of strict diet with 75 to 100 gm. of bread; then follows one of a low protein diet, consisting chiefly of vegetables, and finally one consisting of oatmeal. Each of these is of two or three days' duration. By repeating this procedure for two or three weeks there may be obtained a lowering of acidosis to such an extent that it ceases to be an immediate danger, and there may be obtained also a clear conception of the degree of sugar tolerance. The subsequent treatment is based on the results obtained. A carbohydrate-free diet can often be given for a week or so with marked general improvement. The patient is then allowed a small amount of carbohydrate, or a more prolonged oatmeal or vegetable diet may be given. Every few weeks a period of strict protein-fat feeding of two or three days may be ordered, and once or twice a year a longer period, two or three weeks, should be tried. In conclusion it must be emphasized that no general rule can apply to all cases. Each case must be studied individually and only by such study can the proper line of treatment for any particular case be determined.

THE ACTION OF GLYCOL ALDEHYD AND GLYCERIN ALDEHYD IN DIABETES MELLITUS AND THE NATURE OF ANTIKETOGENESIS *

R. T. WOODYATT, M.D.
CHICAGO

It is generally known that the acetone bodies (acetone, aceto-acetic acid and beta-oxybutyric acid) have their origin in butyric acid, which in turn comes from the fats and to a lesser extent from the proteins, and that the main prerequisite for development of acidosis is a diminution in sugar oxidation. When for any reason the daily oxidation of sugar in the body falls below a certain minimum (say 50 to 75 gm. per day for a man weighing 75 kilograms) then some degree of acidosis supervenes. In the acidosis of starvation, in which lowered sugar combustion is the result of a diminished intake of carbohydrate food, the mere administration of sugar serves to stop the accumulation of acetone bodies. In diabetes, in which the lessened oxidation of sugar is due to the inability on the part of the body to attack the glucose molecule, even when present in abundance, the administration of sugar has less effect than in other acidoses. But, though a diabetic cannot oxidize glucose, he may be able to oxidize other substances chemically allied thereto, such as gluconic acid, saccharic acid, alcohol, etc., and thus lower the existing acidosis. Sugars and allied substances which in oxidizing in the body have the power to lower acidosis are known as antiketogenic substances.

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16. Gigon: München. med. Wchnschr., 1909, lvi, 907.
17. The oatmeal is given as gruel; 200-300 gm. butter is usually taken also, and there may be added a few eggs and vegetables.
18. Allard: Arch. f. exper. Path. u. Pharmakol., 1908, lix, 338.
19. The following vegetables may be used; asparagus, cauliflower, string beans, Brussel sprouts, cabbage, sauerkraut, spinach, lettuce, endives, olives. In addition 4 to 6 eggs are taken daily.

* Read in the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

• The original incentive to do this work was received in Munich. When working on the oxidation of glycerin in the second medical clinic of the university, some glycerin aldehyd was prepared, which, at the suggestion of Dr. Otto Neubauer, assistant to Prof. F. Müller, was fed to a diabetic patient then under observation. Later development of the work was done in Chicago in the Medical Department of Rush Medical College (Professor Billings).

How do antiketogenic substances in oxidizing so influence the oxidation of butyric acid that acetone bodies do not accumulate in the body fluids? That they do it is generally recognized. How they do it is an open problem. Nor is it unimportant that we know what the mechanism of the reaction is, for there is little doubt that antiketogenesis is but one manifestation of a more general physiologic principle. Cathcart, for example, has recently shown that oxidizing sugars have a modifying influence on certain aspects of protein metabolism. A study of antiketogenesis furthermore holds out a reasonable hope that among the many substances whose chemical formulas indicate that they possess antiketogenic properties there may be some which will not have the injurious by-effects of the antiketogens now known, and which will find a practical application in the clinic. Finally an elucidation of this mechanism should put into our hands a means for illuminating some of the darkness which now covers the subject of the breakdown of glucose in the body. For, if antiketogenesis is an effect due to certain products which occur in the oxidation of glucose, an interaction between these products on the one hand and one or more of the acetone bodies on the other, as seems highly probable, then, *vice versa,* any substance which is antiketogenic has a certain claim to recognition as a possible breakdown product of glucose in the body. If the substance prove relatively non-toxic and completely oxidizable in the body its claim is strengthened; and if in addition to these qualifications it is known to be one of the substances which occur outside the body when glucose is oxidized under such conditions as most closely simulate those of the body, then its qualifications are strong. With these three considerations in view a systematic study of the whole problem was planned along the following general lines:

First, to tabulate those substances which as the result of later chemical investigations appear to be important as intermediate steps in the laboratory oxidation of glucose under such conditions as have been mentioned. In this class belong the oxidations of sugar in alkaline media by means of hydrogen peroxid, or the air stream, as elaborately worked out by Nef and his pupils. Secondly, to prepare, whenever feasible, sufficient quantities of these substances for use in metabolism experiments in cases of severe human diabetes in which the ability to utilize glucose has so far disappeared that any substance passing into that hexose in the body will be almost quantitatively excreted as such, whereas a high acidosis will always exist and by its fluctuations give an index of the combustion of the antiketogen in the body.

EXPERIMENTAL ANTIKETOGENESIS

In this place the purpose is to mention briefly the results of experiments in which two of the substances which belong in the above-mentioned tabulation were employed, and, in addition, to draw attention to what is believed to be a plausible explanation, in purely chemical terms, of the phenomenon of antiketogenesis. This process appears to be the expression of a simultaneous oxidation and reduction reaction in which aceto-acetic acid, by virtue of its ketone group, acts as the oxidizing agent and hence undergoes reduction, while any substance containing alcohol groups, or the dissociation of which yields the same unsaturated molecules as do alcohols, acts as the reducing agent and hence becomes oxidized.

The first substance to be considered is glycol aldehyd or diose, the simplest possible sugar, of which there is only one. Its formula is $CH_2OH\text{-}COH$. This was fed as a single 20-gm. dose to a patient with severe diabetes, a young man who had been under close observation for a period of two weeks prior to the giving of the experimental substance. Daily determinations were made of the body weight, the amount and specific gravity of the urine, the amount of sugar (by polarization and reduction controlled at intervals by fermentation), the combined acetone and aceto-acetic acid, beta-oxybutyric acid, ammonia and total nitrogen. In addition to these figures accurate observations were made on the ether-soluble acids, both volatile and non-volatile. The patient was kept in bed and all necessary precautions taken with regard to diet and the collection of excretions to insure a consistent metabolism experiment. There was no increase in urinary reducing substances, no appearance of glycol aldehyd in the urine, and no significant change in the total acetone bodies or ammonium. The patient, however, experienced some nausea and a loosening of the bowels. In view of the fact that Paul Meyer saw toxic effects when he administered an impure glycol aldehyd to rabbits, and since two of the oxidation products of glycol aldehyd, namely oxalic acid and glyoxal, are toxic, it seemed likely that these gastro-intestinal symptoms were not merely incidental to the existing acidosis. Accordingly no further use was made of this substance in diabetes mellitus. From animal experiments, however, it is evident that glycol aldehyd can pass over into glucose in the body and that in oxidizing it can act as an antiketogenic body. Owing to its toxicity, glycol aldehyd can hardly be looked on as one of the main splitting products of glucose in the body.

When glucose is placed in an alkaline solution there probably occurs, among other changes, a partial splitting into two molecules of glycerin aldehyd. This aldehyd by intramolecular rearrangement is responsible for formation of lactic acid when the solution contains deficient oxygen, or for glycerinic acid and oxidation products thereof when air or peroxid are present beside alkali (Nef[1]). Glycerin aldehyd is therefore, *in vitro,* an important intermediate product in the breakdown of the hexose molecule by such methods as we are here discussing. Since lactic acid occurs in the body and, furthermore, as is well known, under conditions which make for a deficiency of oxygen in the tissues, *e. g.,* epileptic fits, strychnin convulsions and cyanosis, it would seem highly probable that glycerin aldehyd also plays a part in the bodily dissociation of hexose. So far as I know we have no data on the biologic behavior of this substance except an unsupported statement by Neuberg that in the animal body and in the diabetic organism it is completely oxidized, a statement not entirely accurate.

The glycerin aldehyd used in the experiments to be reported was made by oxidizing glycerin with hydrogen peroxid, using ferrous sulphate as a catalytic agent; by a slight modification of the method of Fenton and Jackson.[2] As so prepared, glycerin aldehyd is a syrup having a sweet, pleasant taste. It contains about 2 per cent. of water, traces of free acid and glycerin, possibly also some glycol aldehyd. It rapidly polymerizes in the presence of alkalies, even traces being sufficient. It gives a vivid aldehyd reaction with Schiff's reagent, reduces Fehling's solution at room temperature, and silvers the wall of test-tubes containing ammoniacal silver oxid solution.

When given to a healthy individual large doses are tolerated without any apparent effect. In cases of diabetes in which 20 gm. of glucose caused appearance of sugar in the urine as high as 50 gm. of glycerin aldehyd were given without causing glycosuria, or the appearance

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1. Nef: Ann. d. Chem. (Liebig's) ccclvii.
2. Fenton and Jackson: Roy. Chem. Soc., lxxv, 4.

of any reducing substance in the urine. But it is to be distinctly stated that continued dosages of this kind have not yet been given, and the results, such as already obtained, are no more striking than were originally obtained and falsely interpreted when levulose was exploited as a sugar which could be used by diabetics. Its effect when given in single large doses to severe diabetic cases has been shown in four separate experiments, all of which yielded essentially the same results. When glycerin aldehyd is administered by mouth in single 50 to 75 gm. doses two things are constantly noticeable if the case is ultra-severe: first, an increase in the urinary glucose in an amount approximately equivalent to 25 per cent. of the total triose administered; second, a marked reduction of acidosis as evidenced by a fall in the figures representing the excretion of acetone, aceto-acetic acid and beta-oxybutyric acids, and by a corresponding fall in the figures for ammonia. The total nitrogen also falls a little, as is to be expected when a sugar oxidizes. Little or no glycerin aldehyd goes into the urine as such. There is a relative increase of the ether-soluble urinary acids. There is never diarrhea, but rather more gastric disturbance than may occur when large doses of an ordinary sugar are given at once. The substance is in moderate doses nontoxic. In dogs and rabbits diarrhea is caused by doses of 3 gm. per kilo of body weight.

There are two ways to explain how glycerin aldehyd passes over into glucose. 1. The glycerin aldehyd may be in part built up in the intestinal wall into an assimilation product of sugar; such a protein compound, perhaps, as Pavy proposes, which later on breaking down yields only glucose regardless of what sugar originally went into its composition. 2. The glycerin aldehyd may be simply polymerized into a hexose in the alkaline media of the intestine (or after absorption therefrom) as it is outside the body in the presence of alkali. Under these conditions it yields beta-acrose. Its further conversion into glucose would then be analogous to that which occurs when any hexose is administered by mouth.

If the latter explanation is correct, then a gradual administration of dilute doses of glycerin aldehyd, which would allow the least chance for accumulation of an excess in the bowel or in the blood, and which would therefore limit the time during which the triose would be exposed to the action of alkali, should avoid condensation and result in more complete oxidation. If the conversion into glucose is an expression of the fact that glycerin aldehyd has been built up into something else by cell action, and that it oxidizes directly only when it is given in such inundating excess that much free glycerin aldehyd passes over into the blood unchanged, then gradual doses should cause greater conversion into glucose, and consequently less oxidation.

A case which had already shown 75 per cent. oxidation of glycerin aldehyd and 25 per cent. excretion as glucose when a single 75-gm. dose of the former had been given showed different effects when the triose was given in small repeated doses. For three consecutive days, 40 gm. per day were administered, the doses being a tablespoonful of a dilute solution every few minutes all day.

The average excretion of glucose for five days prior to the experiment was 68 gm.; for the three days of the experiment the average was 105, a difference of 37 gm.; *i. e.*, about 92 per cent. reappeared in the urine as glucose, and in corroboration of this appearance there was no appreciable reduction in acidosis to indicate that any considerable amount had oxidized. From this striking difference in the behavior of gradual and acute dosages it would seem likely that the conversion of glycerin aldehyd into glucose is the work of a bodily assimilative process which requires time and limited concentration for its fulfilment. However, since single heavy doses of glucose cause a higher percentage of oxidation than gradual ones, the difference might be simply an effect of concentration of sugar in general in the blood. All of these findings support the idea that glycerin aldehyd may well be a normal intermediate product in the bodily oxidation of sugar.

MECHANISM OF ANTIKETOGENESIS

It now remains to be shown what the mechanism of the *reaction* is, whereby sugars and such substances as alcohol, glycerin, glycerin aldehyd, gluconic acid, etc., in the course of their oxidation depress acidosis. As already stated, this is an open problem and one for the solution of which there is no good hypothesis. Nasse's "secondary oxidation" and Naunyn's suggestion that the burning sugar ignites the acetone bodies as a conflagration sets fire to objects in its neighborhood, are really more graphic than chemical. In this communication a suggestion will be made as to the possible nature of this phenomenon, to which Satta gave the name antiketogenesis.

In a long series of contributions to our knowledge of the chemistry of light Ciamician and Silber[3] showed that when ketones, diketones, keto-acids and nitro-bodies are mixed with alcohols (monatomic or polyatomic) and exposed for varying periods to the Italian sunlight, reactions occur in which the alcohols are oxidized and the nitro-bodies, ketones, etc., are reduced. The following serves to illustrate a reaction of this type: In this

$O:C_6H_4\cdot O$	+	CH_3CH_2OH	=	$HO.C_6H_4.OH$	+	$CH_3.COH$
Benzoquinone		Ethyl alcohol		Hydroquinone		Acetaldehyd

instance the two CO or ketone groups of the benzoquinone have each taken up one H atom to give the reduction product hydroquinone, whereas the alcohol group of the ethyl alcohol has lost two H atoms and been converted into the oxidation product, acetaldehyd. One of the substances with which these authors worked was levulinic acid, CH_3-CO-CH_2-CH_2-COOH, which, like aceto-acetic acid contains a CO group—is, in other words, a keto-acid. Levulinic acid when mixed with alcohol and exposed to the sunlight undergoes reductions to the corresponding oxyacid, gamma-oxy-valerianic acid, CH_3-CHOH-CH_2-CH_2-COOH, the alcohol going, as in the above instance, to acetaldehyd. Here then is a chemical reaction capable of fulfilment without the use of strong reagents or extraordinary physical conditions, in which a ketone outside the body may be destroyed by such substances as are known to be "antiketogenic" in the body. And the destruction of the ketone in these instances is simultaneous with oxidation of the alcohol, glycerin or sugar, as the case may be; in fact, the doubly-bound oxygen actually serves as the oxidizing agent.

Now, since aceto-acetic acid, CH_3-CO-CH_2-COOH, like levulinic, a keto-acid, may actually be reduced by means of sodium amalgam to beta-oxybutyric acid, CH_3-CHOH-CH_2-COOH, it would seem likely that aceto-acetic acid would behave with alcohols and sunlight in the same way as the other substances investigated by Ciamician and Silber. As a matter of fact, it has been possible to show that aceto-acetic acid, when mixed with absolute alcohol and long exposed to the action of light, does undergo a reduction to beta-oxybutyric acid, while the alcohol burns to acetaldehyd. Magnus-Levy and others have leaned to the view that aceto-acetic acid, when formed in the body, is destroyed by a direct acid splitting into two molecules of acetic aid, which then oxidize further; whereas, if we assumed that the bodily destruction of aceto-acetic acid produced in accordance with the mechanism of Ciamician and Silber's reaction, we would then have to consider that aceto-acetic acid is destroyed by reduction, not splitting followed by oxidation. Is there any evidence to support such a conception?

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[3] Ber. d. deutsch. chem. Gesellsch., xxxiv, 530, 2040; xxxv, 1992, 3593, 4128; xxxvi, 1575.

As already stated, the Italian writers found that nitro-bodies, like ketones, underwent reduction under the conditions in question. Nitrobenzol, for example, is reduced by alcohol to anilin, according to the general rule. Now, nitrobenzol, when ingested by men or animals, undergoes in the body reduction to para-amino-phenol, a near derivation of anilin and one which occurs in the urine when anilin itself is ingested. Outside the body the reduction depends on simultaneous oxidation of alcohol groups. Is it so dependent in the body? If so, animals in which sugar oxidation is virtually eliminated by the use of phlorhizin and abstinence from food should be unable to reduce nitrobenzol to para-amino-phenol. This appears to be the case. Recently Dakin,[4] Freedmann and Masse Blum[5] have shown that acteto-acetic acid when intravenously injected (as a solution of the sodium salt) into dogs and cats is actually reduced to beta-oxybutyric acid, whereas it is well known that in acidosis very considerable amounts of aceto-acetic acid may be spontaneously introduced into the bloodstream without the appearance of beta-oxybutyric acid in the urine. In favor of the idea that aceto-acetic acid is normally destroyed by reduction in the course of a simultaneous oxidation and reductive reaction like those exploited by Ciamician and Silber, there is the following condensed evidence: Aceto-acetic acid in the presence of an alcohol outside the body is reduced, the alcohol undergoing simultaneous oxidation. Aceto-acetic acid is reduced in the body when sugar (alcohol) oxidation is going on (Dakin et al.). When sugar oxidation fails aceto-acetic acid is spontaneously excreted in large amounts, and moderate amounts of aceto-acetic acid may exist prior to the appearance of any beta-oxybutyric acid in the urine. Nitro-bodies, which act outside the body in the same general way as aceto-acetic acid and other ketones, are also reduced in the healthy body, but when sugar oxidation is eliminated they, too, apparently fail to be reduced. In every case the substances which destroy acidosis in the body also reduce ketones, nitro-bodies, etc., in the sunlight.

Reduction of aceto-acetic acid will account for the disappearance of this substance and its splitting product acetone, *i. e.*, two of the acetone bodies. It must now be asked what becomes of the beta-oxybutyric acid which is formed in the process. There is always the possibility that beta-oxybutyric acid can be oxidized in the body in two different ways. If so, then in health one would conceive of a double oxidation of beta-oxybutyric acid, two products being formed, aceto-acetic acid on the one hand and a dioxybutyric acid on the other. The latter substance. being easily oxidizable, would rapidly burn further. The aceto-acetic acid as fast as formed would be reduced back again into beta-oxybutyric acid. In this way all beta-oxybutyric acid would eventually have to oxidize over the dioxybutyric route, this being the only way in which it could oxidize and stay oxidized.

Note.—One might think here of a sort of organic chemical equilibrium between molecules of, say, beta-oxybutyric acid and those dissociation products thereof whose existence is the prelude to formation of alpha and alpha-beta oxyacids respectively, such equilibrium being comparable to that which exists in a solution of an electrolyte between the molecules of *the electrolyte and its ions as expressed* for NaCl by the familiar formula

$$\frac{Na \times Cl}{NaCl} = K.$$

If the proportionate concentrations of beta particles becomes lessened by a rapid excretion of aceto-acetic acid instead of being maintained by constant reductions of the same the equilibrium would become disturbed and in the attempt to maintain it a very high aggregate amount of beta products would be formed and a very low aggregate of alpha-beta products. Normally the entire balance may be reversed in simple accordance with the laws of mass action.

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[4] Dakin, H. D.: A New Mode for the Formation of Beta-Oxybutyric Acid in the Animal Organism, The Journal A. M. A., April 30, 1910, p. 1441.

[5] Munchen. med. Wchnschr., lvii, 1796.

THE RELATION OF THE PANCREAS TO DIABETES *

JOSEPH H. PRATT, M.D.
BOSTON

Over two hundred years ago Conrad Brunner[1] showed by experiments on dogs that a large portion of the pancreas could be removed without affecting the health of the animals. Progress in the physiology of the pancreas was slow and as late as 1888 the conclusions reached by Martinotti[2] in his experimental studies published that year were those generally accepted. Martinotti asserted that after the complete extirpation of the pancreas no disturbance resulted either in the general condition or in the digestive functions. The dogs in fact gained in weight. Claude Bernard[3] had asserted that shutting off the pancreatic juice by injecting oil into the ducts under considerable pressure, caused a serious disturbance in the absorption of fat, but subsequent investigators were unable to confirm his observations.

The idea that there was some relation between diabetes and disease of the pancreas was entertained by a number of clinicians, including Frerichs,[4] Bouchardat,[5] Lancereaux,[6] Popper,[7] Lapierre,[8] and Baumel,[9] who were impressed with the frequent association of the two conditions. They thought that diabetes was the result of a disturbance in the composition of the pancreatic juice so that it acted abnormally on the sugar-producing foods in the intestine, or that the juice deficient in some particular was absorbed from the intestine and interfered with carbohydrate metabolism in the tissues of the body.

In 1889 von Mering and Minkowski[10] made the important discovery that after complete extirpation of the pancreas in dogs a severe and rapidly fatal diabetes always developed. The secretion of the sugar began usually on the day following the operation, but occasionally within five or six hours. The failure of the earlier experimenters to produce diabetes by extirpation of the pancreas was readily explained, as none of them had succeeded in removing all the pancreatic tissue. Von Mering and Minkowski found that the diabetes developed in dogs that had been kept fasting for a long time and in which the intestines were empty. This showed that the diabetes could not be due to the cessation of some hypothetic action which the pancreatic juice has on the ingested food, for the diabetes developed promptly although there was no food in the intestine. Hence they concluded that extirpation of the pancreas produced some disturbance in the intermediate metabolism. There are two possibilities, they said: 1. There is an accumulation of some substance in the body, possibly a ferment or a poison, which is normally destroyed by the pancreas. After the pancreas has been removed this substance causes the elimination of the sugar. 2. The destruction of sugar in the organism is a normal function of the pancreas.

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* Read in the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

[1] Brunner, Conrad: Experimenta nova circa Pancreas, Amstelod, 1682; Miscellanea nat. curios, Dec. 11, 1688; cited by von Mering and Minkowski.

[2] Martinotti, G.: Gior. d. r. Accad. di med. del Torino, 1888, pp. 348, 383.

[3] Bernard, Claude: Leçons de physiologie expérimentale, Paris, 1856, ii, 274.

[4] Frerichs: Ueber den Diabetes, Berlin, 1884; cited by Lombroso.

[5] Bouchardat: De la glycosurie ou diabète sucré, Paris, 1875, p. 108.

[6] Lancereaux: Bull. de l'Acad. de méd., 1877, series 2, vi, 1215.

[7] Popper: Oesterr. Ztschr. f. prakt. Heilk., 1868, xiv, 194.

[8] Lapierre: Thèse de Paris, 1879; abstracted by Sauerbeck.

[9] Baumel: Montpellier méd., 1881, i, 105; ii, 406; 1882, i, 31, 442; 1886, i, 213; cited by von Mering and Minkowski.

[10] Von Mering and Minkowski: Zentralbl. f. inn. Med., 1889, xxiii, 393; Arch. f. exper. Path. u. Pharmakol., 1889, xxvi, 371.

The experiments of von Mering and Minkowski have been repeated and confirmed by many investigators. The total removal of the pancreas in the dog, cat and other mammals always produces a severe and rapidly fatal diabetes.

At the time of the discovery of pancreatic diabetes little was known of the internal secretion of ductless glands. Brown-Séquard's[11] views on the internal secretion of the testes were not published until 1889. Claude Bernard[12] as early as 1855 had used the expression *sécrétion interne* in describing the glycogenic function of the liver, but that term is not used by von Mering and Minkowski in their first papers. They did conclude, however, that the experimental diabetes produced by removal of the pancreas was due to the cessation of a "specific, hitherto unknown function of the pancreas." Lépine[13] a little later asserted that the pancreas furnished an internal secretion, and he attempted to prove by experiments that this secretion contained a ferment with glycolytic power which passed from the pancreas into the blood, and was taken up by the leukocytes. Lépine supported his theory by the demonstration that the sugar-destroying power of the blood was diminished in experimental pancreatic diabetes as well as in human diabetes. The extirpation of the pancreas removed the chief source of production of this ferment and thereby the glycolytic power of the blood was diminished. This work seemed to furnish strong evidence that the pancreas produced an internal secretion, but his claims were quickly disproved by a number of investigators (Arthus,[14] Kraus,[15] Minkowski[16] and others). It was shown that the glycolysis observed by Lépine was probably due to post-mortem changes in the blood. His methods were called in question and his statement that the glycolysis in normal blood was greater than in diabetic blood could not be verified. Even if Lépine's observations had been correct the ferment content of the blood alone would not have been sufficient to produce the normal destruction of sugar in the body.

Years later when O. Cohnheim's[17] studies appeared it seemed as if the long-sought-for internal secretion of the pancreas was at last discovered. Cohnheim found that a fresh extract of the pancreas does not destroy sugar and that muscle juice has only slight action; but when the two are combined the mixture acquires marked glycolytic power. The substance furnished by the pancreas is not destroyed by heat. It is supposed to activate the ferment of the muscle which then is able to cause the combustion of sugar. The muscle ferment is thermolabile and readily destroyed by any adverse condition. An excess of the pancreatic excitor has an inhibitory action. Cohnheim's observations have been supported by Arnheim and Rosenbaum,[18] Hirsch,[19] De Witt[20] and Hall,[21] but the later studies of Simpson[22] as well as the work of Claus and Embden,[23] have thrown doubts on their value. Vahlen[24] believes that he has obtained a product of the pancreas which produces the vital destruction of sugar in a purely katalytic manner.

Chauveaux and Kaufmann,[25] mindful of the teachings of Claude Bernard,[26] attempted to modify his hepato-neurogenic theory of diabetes to accord with the discovery of pancreatic diabetes. The source of the sugar according to their views is the liver. The normal production of sugar in the liver is under the regulating influence of the nervous system and the pancreas. The nerves passing to the liver carry stimulating impulses, while the pancreas has an inhibitory action on the formation of sugar. Although at first they held to the view that this influence of the pancreas on the sugar-forming function of the liver was through the nervous system, they later, as a result of experimental study, supported the view that the pancreas furnished an internal secretion which was carried by the blood to the liver. When the pancreas is extirpated the inhibitory influences cease. Pancreatic diabetes would thus be the result of an increased production of sugar, and not of diminished destruction. No recent writers have accepted the theory of Chauveaux and Kaufmann.

The theory that the experimental diabetes produced by von Mering and Minkowski is due to lack of the internal secretion of the pancreas has been accepted by most physiologists and pathologists. It has had its opponents, however, chief of whom has been Pflüger.[27]

This investigator contended that the antidiabetic power of the pancreas is under the control of the nervous system, and he actively opposed the theory that the pancreas furnished an internal secretion. He asserted that there was in the wall of the duodenum an "antidiabetic" central organ rich in ganglion cells, which by means of nerves passing to the pancreas governed the antidiabetic power of that gland. Pflüger supported his position by experiments on frogs. After extirpation of a portion of the duodenum in contact with the pancreas the frogs developed as severe a diabetes as was ever observed after total extirpation of the pancreas. If

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11. Brown-Séquard: Arch. de physiol., 1889, xxi, 651; Compt. rend. Soc. biol., 1889, pp. 415, 420, 454.
12. Bernard, Claude: Leçons de physiol. expér., Paris, 1855, i, 96.
13. Lépine: Lyon méd., 1889, lxii, 619; Arch. méd. expér., 1891, p. 222.
14. Arthus: Arch. de physiol., 1890, p. 425.
15. Kraus: Ztschr. f. klin. Med., 1892, xxi, 315.
16 Minkowski: Arch. f. exper. Path. u. Pharmakol., 1893, xxxi, 85.
17. Cohnheim, O.: Ztschr. f. physiol. Chem., 1903, xxxiv, 336; 1904, xlii, 401; 1905, xliii, 547; 1906, xlvii, 253.
18. Arnheim and Rosenbaum: Ztschr. f. physiol. Chem., 1904, xl, 220.
19. Hirsch: Beitr. z. chem., Physiol. u. Path., 1904, iv, 535.
20. De Witt: Jour. Exper. Med., 1906, viii, 193.
21. Hall: Am. J. Physiol., 1907, xviii, 283.
22. Simpson: Bio-Chemical Jour., 1910, v, 126.
23. Claus and Embden: Beitr. z. chem., Physiol. u. Path., 1905, vi, 214-343.
24. Vahlen: Zentralbl. f. Physiol., 1908, xxii, 201.
25. Chauveaux and Kaufmann: Compt. rend. Soc. biol., Paris, 1893, xlv, 17, 29; Kaufmann: Compt. rend. Soc. biol., Paris, 1894, pp. 254, 284, 669.
26. Bernard: Leçons sur le diabète et la glycogénèse animale, Paris, 1877.
27. Pflüger: Arch. f. d. ges. Physiol., 1907, cxviii, 265, 267; 1907, cxix, 227, 297; 1908, cxxii, 267; 1908, cxxiii, 323; 1908, cxxiv, 633.

this view was correct, said Pflüger, then cutting the nerves which pass from the duodenum to the pancreas would produce diabetes with the intestine and pancreas uninjured. As he expected, this simple procedure produced as marked a diabetes as when the pancreas or duodenum was extirpated. Only a few experiments were performed on dogs, but Pflüger asserted that removal of the duodenum produced glycosuria, although he emphasized the difficulty of the operation. The speedy death of the animals rendered his experiments on dogs unsatisfactory. Pflüger concluded on the basis of his experimental work that the pancreatic diabetes of von Mering and Minkowski was really duodenal diabetes, and was due to the destruction of nerves passing from the antidiabetic centers in the duodenum.

Pflüger's study of "duodenal diabetes" and his theory of the nervous origin of diabetes attracted much attention. It was not long before Ehrmann,[28] Lauwens,[29] Rosenberg,[30] and Minkowski[31] showed the error of Pflüger's conclusions, at least so far as dogs and other mammals were concerned. They found that the total removal of the duodenum in the dog was not followed by diabetes.

In six dogs and two cats Dr. Murphy and I have dissected the pancreas free from the duodenum, leaving only a few branches of the pancreatico-duodenal artery and vein connecting the two. In none of the experiments did glycosuria result, although the nerves passing from the duodenum were cut and a new nervous connection was prevented by drawing the omentum between the duodenum and the corpus pancreatis.

Recent publications by Rosenberg[32] and Löwit[33] give satisfactory evidence that "duodenal diabetes" does not exist in frogs. There is then no justification for the use of the term. The glycosuria observed by Pflüger was a *Kaltediabetes* produced by keeping his frogs on ice.

Transplantation experiments support the theory that the pancreas furnishes an internal secretion. Minkowski[34] and later Hédon[35] and Thiroloix[36] drew a portion of the pancreas out of the peritoneal cavity and placed it beneath the skin of the anterior abdominal wall. The remainder of the gland was extirpated, but sugar did not appear in the urine. When the graft of transplanted pancreas was removed severe diabetes developed. Pflüger[37] and Hédon[38] were not convinced that this experiment excluded the nervous origin of diabetes, for the stalk of mesentery which furnished the blood-supply to the transplanted portion of pancreas also conveyed nerves which connected the graft with the central nervous system. Hédon[38] found that in a large series of experiments cutting of this mesenteric pedicle was followed by diabetes except in three animals. Pflüger's explanation of these exceptions is that the nerves were not severed when the pedicle was cut. But, as Minkowski[31] points out, Pflüger brought forward no evidence in support of his statement. There is really no doubt that necrosis of the transplanted glandular tissue, due to an insufficient blood-supply, is the cause of the diabetes that follows section of the vascular pedicle. Lombroso[39] working with Minkowski recently repeated this experiment of Hédon. After the vascular stalk supplying the transplanted piece of gland was cut there was only a slight glycosuria lasting but three days. Removal of the pancreatic graft was followed by a fatal diabetes. Success in this experiment was probably due to a good-sized artery of the skin that had grown into the pancreatic tissue, and which nourished the graft after the former blood-supply was shut off.

An experiment by Martina[40] furnishes equally strong evidence against Pflüger's neurogenic theory of pancreatic diabetes. The method that Payr employed with success in implanting pieces of thyroid into the spleen was used by Martina, who took a portion of the pancreas wholly free from its vessels and nerves and imbedded it into the spleen of a dog. The animal survived the extirpation of the remainder of the gland the unusually long time of three months, although diabetes of no slight intensity developed.

Forschbach[41] effected the union of two animals according to the method devised by Sauerbruck and Heyde for producing parabiosis. The abdominal walls of two animals were united in adjacent flanks and the peritoneal cavities were brought into communication. There was an exchange of blood and lymph, but certainly no transfer of nervous impulses from one dog to the other. It was found that the parabiosis of a depancreatized dog with a normal animal either prevented diabetes or reduced the glycosuria to one of slight degree. The most plausible explanation of this is that the pancreas of the normal dog furnished some substance to the blood which was carried in the circulation to the depancreatized dog and enabled it to assimilate sugar. Probably some of the sugar passed from the depancreatized dog into the blood-stream of the normal animal and was consumed in its tissues, but Forschbach presents experimental evidence that this was not the only cause of the diminished glycosuria in the dog from which the pancreas had been removed.

There is no proof that the pancreas produces an internal secretion, although the theory is more probable than any other that has been advanced. Pflüger deserves credit for showing how little actual evidence has been brought forward in its support, and his criticism has been a stimulus to many investigators. In his last communication on the subject published in 1909 he said:[42]

> I am, indeed, still of the opinion that the internal secretion has not been demonstrated to be the cause of pancreatic diabetes. What is not proved, however, may nevertheless be true. That is my point of view.

The strongest argument against the theory is the failure to cure pancreatic diabetes or to diminish the glycosuria by the injection of pancreatic extracts or by feeding the fresh gland. Hédon has asserted that the internal secretion of the pancreas will remain a hypothesis until it is possible to isolate from the gland a substance, the injection of which will check completely the diabetes of a depancreatized dog. This investigator performed a large series of experiments with aqueous and glycerin extracts of the pancreas. Even with strict attention to asepsis, abscesses formed at the site of injection unless the extract was passed through a porcelain filter. He was unable to diminish by the use of any pancreatic preparation the intensity of the experimental diabetes. He suggested the possibility that the negative results were due to the presence of antagonistic substances in the pancreatic extract which neutralized each other in the organism.

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[28] Ehrmann: Arch. f. d. ges. Physiol., 1907, cxix, 295.

[29] Lauwens: Arch. f. d. ges. Physiol., 1907, cxx, 623.

[30] Rosenberg: Arch. f. d. ges. Physiol., 1908, cxxi, 358.

[31] Minkowski: Arch. f. exper. Path. u. Pharm., 1908, lviii, 395.

[32] Rosenberg: Biochem. Ztschr., 1909, xviii, 95.

[33] Löwit: Arch. f. exper. Path. u. Pharm., 1909, lx, 427; 1909, lxii, 47.

[34] Minkowski: Berl. klin. Wchnschr., 1892, p. 90; Arch. f. exper. Path. u. Pharmakol., 1893, xxii, 271.

[35] Hédon: Arch. d. Physiol., 1892, iv, 617.

[36] Thiroloix: Compt. rend. Soc. biol., Paris, 1892, p. 966.

[37] Pflüger: Arch. f. d. ges. Physiol., 1907, cxviii, 267.

[38] Hédon: Travaux de la physiologie, 1898; cited by Pflüger.

[39] Lombroso: Ergebn. d. Physiol., Wiesbaden, 1910, ix, 11.

[40] Martina: Deutsch. med. Wchnschr., 1908, No. 1, p. 45.

[41] Forschbach: Arch. f. exper. Path. u. Pharmakol., 1909, lx, 131.

[42] "Ich bin aber allerdings auch heute noch der Ansicht dass die innere Secretion als Ursache des Pankreasdiabetes nicht bewissen ist. Das nicht Bewissen kann aber noch wahr sein. Das ist mein Standpunkt." Pflüger: Arch. f. d. ges. Physiol., 1909, cxxviii, 125.

Many attempts have been made to treat diabetes in man by feeding the fresh pancreas or by administering pancreatic preparations, but without success. Recently Spooner and I[43] fed the fresh gland to a man known to have pancreatic diabetes. This patient had had suppurative pancreatitis in 1903, and at operation a large amount of necrotic pancreatic tissue was removed. Three years later diabetes developed. He ate two or three raw pancreases daily for a month, but the glycosuria was not diminished.

Starling[44] stated that if the internal secretion of the pancreas is of the same nature as the other bodies which he grouped together under the name of hormones, it should be possible to isolate the active principle from the gland and by introducing it into the circulation to influence favorably cases of diabetes due to pancreatic disease.

Zuelzer[45] in 1907 found that he could prevent adrenalin diabetes by the injection of a pancreatic extract. He later[46] reported that he had used this preparation with success in human diabetes. In preparing the active principle he removed the pancreas, which he had previously rendered hyperemic, at the height of digestion. The juice of the gland was expressed and the protein removed with alcohol. An examination of his report of seven cases shows that the diminution of the glycosuria was only transitory, and that the injection produced a severe febrile toxic condition. Forschbach[47] tried the effect of Zuelzer's "hormone" in two cases of diabetes, but owing to the serious symptoms which resulted its use was abandoned. Probably the decrease in the glycosuria was due largely, if not entirely, to the toxic action of the extract, as instances have been observed, both in man and animals, in which the glycosuria diminished in consequence of a febrile infection.

Pflüger[37] pointed out that the living pancreas may possibly supply the circulating blood with an active internal secretion as rapidly as it is formed, so that there is never more than a trace of the secretion present in the gland. If this be so an extract of the pancreas would not be expected to produce any decrease of the glycosuria.

It is necessary to remove four-fifths or more of the pancreas in order to produce diabetes. Sandmeyer[48] found that if the ducts were tied and partial extirpation of the pancreas performed diabetes developed after a time. Gradual degeneration of the gland followed obstruction of the outflow of the external secretion produced by tying the ducts. Even Pflüger[37] admitted that Sandmeyer's work was evidence in favor of the theory that the pancreas plays a part in the production of diabetes, for even small remains of pancreatic tissue prevented the development of glycosuria which first appeared when they were degenerated. According to Pflüger this fact is the only one that favors the theory that the pancreas furnishes an internal secretion. I have found in my experimental study additional evidence of a similar nature. If all the pancreatic juice is excluded from the intestine rapid atrophy of the gland takes place and the limit of assimilation for glucose drops quickly. In one dog it fell from 121 gm. to 65 gm. within three weeks. In two other dogs it dropped to 35 gm. in from two to three months.

Spooner and I found that the limit of assimilation was raised in an animal with atrophy of the pancreas, by feeding the fresh gland. In a dog with the pancreas entirely separated from the duodenum the limit of assimilation was determined at frequent intervals for a year and it was never more than 35 gm. This animal was then given three sheep's pancreases a day for six weeks and the limit of assimilation rose to 80 gm. It continued to rise for a short time after the administration of fresh pancreas was discontinued and the maximum reached was 100 gm.

The most reasonable explanation for this remarkable increase in the animal's ability to assimilate carbohydrates is that the pancreas fed to the dog contained some substance that passed from the digestive tract into the blood and aided in the metabolism of glucose. It certainly supports the theory of the pancreatic origin of diabetes rather than the neurogenic hypothesis.

Evidence gained from histologic study indicates that there is a close connection between lesions of the pancreas and diabetes. The areas described by Langerhans[49] in 1869 and which bear his name have been thought by many investigators to have as their function the production of an internal secretion. This conception of their nature was first put forward by Laguesse[50] in 1893.

The islands of Langerhans are of irregular outline, as De Witt[20] has shown in her reconstruction models. They are composed of solid columns of polygonal cells with round or oval vesicular nuclei and with a very finely granular protoplasm that does not stain well with eosin. Lane[51] has described two types of cells containing granules of different character, both of which differ in chemical nature from the zymogen granules of the cells of the acini. The islands are highly vascular, the veins and capillaries forming a rich plexus of thin-walled bloodvessels (sinusoids) in intimate relation with the epithelial cells. Flint[52] has shown by means of the digestion method that the connective tissue of the islands is characteristically arranged and differs from that of the rest of the lobule. There is a delicate fibrous capsule which often covers only a portion of the island. It is generally held that these structures are not connected with the excretory ducts, but in pathologic conditions communications with the ducts have occasionally been found.

Histologically there is close resemblance between the islands of Langerhans and the parathyroid and others of the ductless glands. It was on the structural peculiarities of the islands that Laguesse based his view that these bodies are concerned solely with the internal secretion of the pancreas.

Lewaschew,[53] Laguesse,[50, 54] and others regard the islands as acini that have undergone temporary alterations, and they hold that they may change back into secreting acini. It was maintained by Lewaschew on the basis of an experimental investigation that stimulation of the pancreas increased the number of islands. Dale[55] and more recently Laguesse[56] claim to have demonstrated that starvation has the same effect. Dale found that injections of secretin exhausted the acini, thereby converting many of them into islands. Opie[57] in a careful study was unable to confirm Lewaschew's observations. Vincent and Thompson[58] have repeated Dale's experiments and agree with his conclusions.

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[43] Pratt and Spooner: Unpublished observations.

[44] Starling: Zentralbl. f. d. ges. Physiol. u. Path. d. Stoffwechs., 1907, ii, 209.

[45] Zuelzer: Berl. klin. Wchnschr., 1907, p. 474.

[46] Zuelzer: Ztschr. f. exper. Path. u. Therap., 1908, v, 307.

[47] Forschbach: Deutsch. klin. Wchnschr., 1909, p. 2053.

[48] Sandmeyer: Ztschr. f. Biol., 1894, xxxi, 12.

[49] Langerhans: Inaug.-Dis., Berlin, 1869; abstracted by Sauerbeck.

[50] Laguesse: Compt. rend. Soc. biol., Paris, 1893, p 819; Jour. de l'anat. et physiol., 1894, xxx, 79, 591, 731.

[51] Lane: Am. Jour. Anat., 1907, vii, 409.

[52] Flint: Arch. f. Anat. u. Entwicklngsgesch, 1903, p. 61.

[53] Lewaschew: Arch. f. mikrosk. Anat., 1886, xxiv, 452.

[54] Laguesse: Compt. rend. Soc. biol., 1908, lxv, 139.

The theory that the islands are under normal conditions anatomically independent of the rest of the pancreas has stronger evidence for its support. The studies of Pearce[59] and Helly[60] show the early differentiation of these structures in the embryo. The observations of Flint,[52] De Witt[20] and Lane[51] do not accord with the *balancement* theory of Laguesse, but favor the view that the islands of Langerhans are independent structures. The evidence from histologic investigations supports the theory that the pancreas produces an internal secretion.

Schaefer[61] in 1895 was the first to suggest that pathologic alterations of the islands of Langerhans might be the cause of diabetes. Ssobolew[62] announced in 1900 that the islands were absent in two diabetic subjects examined by him. Opie[63] in the same year described marked lesions of the islands of Langerhans in diabetes. His admirable papers aroused great interest and gave a new impetus to the histologic study of the pancreas. Excellent critical reviews of the literature of the subject have been published by Sauerbeck[64] in 1904 and Lombroso[39] in 1910. There is quite general agreement as to the pathologic findings, but much dispute as to their interpretation. As a result of the investigations of the past decade it can be definitely stated that pathologic changes in the pancreas occur in the majority of cases of diabetes. Occasionally the lesions are limited to the islands of Langerhans and occasionally to the acini, but usually both are involved in varying degree.

Most investigators of the subject hold one of two views. The "acinar theory," as it may be called, which was advanced by Hansemann[65] in 1894 has among its other supporters Gutmann,[66] Karakascheff,[67] Herxheimer[68] and Schmidt.[69] They believe that the internal secretion is furnished by the acini, and that pancreatic diabetes is due to disease of the acini.

The theory that the islands of Langerhans alone are concerned with the internal secretion of the pancreas, and that diabetes is due to disease of these structures and not of the acini, is held by Ssobolew,[70] Opie[71] Sauerbeck,[64] De Witt,[20] MacCallum,[72] Cecil[73] and others.

From the literature Sauerbeck[64] collected reports of 176 cases of diabetes in which the pancreas had been examined histologically. In fifteen the gland was normal, in six the lesions were confined to the islands, in twenty-seven to the acini. This would indicate that pathologic alterations are more frequently limited to the acini than to the islands, but Cecil,[73] in ninety cases of diabetes in which he examined the pancreas, found the islands affected in every case in which the acini were involved.

Ssobolew,[70] De Witt[20] and Visentini[74] tied the ducts or placed ligatures about the gland in dogs or cats and found that the acini degenerated, but that the islands were left intact. MacCallum[72] separated one of the two branches of the pancreas from the remainder of the gland. At the end of seven months the atrophied portion contained only the remnants of ducts and masses of cells, which he regarded as the islands of Langerhans.

I have found in a series of experiments on dogs and cats that when all the pancreatic juice is excluded from the intestine there is degeneration and destruction of both the acini and the islands, associated with a great and diffuse development of connective tissue. This has been a constant finding and is a striking contrast to the results obtained by other investigators.

Lombroso,[39, 75] for example, 140 days after ligation of the "pancreatic duct" in a dog found that "not only the islands, but many large groups of acini, preserved a completely normal appearance." Zunz and Mayer[76] confirmed these results. Other investigators as cited above found the islands preserved, but *the acini sclerosed or destroyed*.

Failure to occlude permanently all the ducts is the explanation of these findings. In Lombroso's experiments and in those of Zunz and Mayer we have evidence that the pancreas was still producing its external secretion and furnishing it to the intestine, for metabolism experiments conducted on their animals showed that the absorption of fats and proteins was normal. The fact that a part of the gland was functionating explains the preservation of the secreting tissue. Hess[77] was the first to point out an error into which experimenters have stumbled. He discovered that there were usually more than two excretory ducts in the dogs; hence when only two were tied the pancreatic juice entered the intestine through the accessory channel. Even when all the ducts are tied, necrosis may occur and sinuses carry the secretion into the duodenum, as I discovered early in my experimental work.

Before Minkowski performed his skilful operations it was held that total removal of the pancreas was not followed by any symptoms. It is now known that the failure of the early experimenters to produce diabetes was due to the fact that they did not succeed in removing all the pancreatic tissue. So to-day it is generally held that there is no disturbance in the digestion and absorption of food when the pancreatic juice is excluded from the intestine. This belief is based on the work of Lombroso and others who did not succeed in keeping all of the pancreatic secretion out of the intestine. Lamson, Marks, and I[78] showed conclusively in a recent study that if all the pancreatic secretion is excluded there is always a great decrease in the amount of fat and proteins assimilated. There is marked loss in weight and strength and the animals sometimes die of inanition. Our constant results are due to the skill with which the operation of completely separating the pancreas from the duodenum was performed by Dr. F. T. Murphy. It is a more difficult procedure than total extirpation of the pancreas, as is shown by the failures of many experimenters.

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[55] Dale: Proc. Roy. Soc, London. 1904, lxxiii, 84.

[56] Laguesse: Comt. rend. Soc. biol., 1910, p. 369.

[57] Opie: Bull. Johns Hopkins Hosp., 1900, xi, 205

[58] Vincent and Thompson: Internat. Monatschr. f. Anat. u. Physiol., 1907, xxiv, 91.

[59] Pearce: Am. Jour. Anat., 1903, ii. 445.

[60] Helly: Arch. f. mikrosk. Anat., 1905, lxvii, 124.

[61] Schaefer: Lancet, London, 1895, ii, 321.

[62] Ssobolew: Cenaralbl. f. allg. path. u. path. Anat., 1900, xi, 202; Arch. f. path. Anat, 1902, clxviii, 91.

[63] Opie: Jour. Boston Soc. Med. Sc, 1900, iv, 251; Jour. Exper. Med., 1901, v, 397.

[64] Sauerbeck: Ergebn. d. allg. path. u. path. Anat., Wiesbaden, 1904, viii, 538.

[65] Hansemann: Ztschr. f. klin. Med., 1894, xxvi, 191; Verhandl. d. Deutsch. path. Gesellsch. in Hamburg, 1901, p. 187.

[66] Gutmann: Arch. f. path. Anat., 1903, clxxiii, 493.

[67] Karakascheff: Deutsch. Arch. f. klin. Med., 1907, lxxxii, 60.

[68] Herxheimer: Arch. f. path. Anat., 1906, clxxxiii, 228; Orth's Festchr., 1903, p. 228; Deutsch. med. Wchnschr., 1906, p. 829.

[69] Schmidt: München. med. Wchnschr., 1902, p. 51.

[70] Ssobolew: Arch. f. path. Anat., 1902, clxviii, 91.

[71] Opie: Disease of the Pancreas, Philadelphia, 1903.

[72] MacCallum: Bull. Johns Hopkins Hosp., 1909, xx, 265.

[73] Cecil: Jour. Exper. Med., 1909, xi, 266.

[74] Visentini: Arch. f. Anat. u. Physiol., Physiol. Abteilung, 1908. Suppl. Band, p. 23.

[75] Lombroso: Jour. de physiol. et de path. gén., 1905, vii, 3.

[76] Zunz and Mayer: Mém. de l'Acad. roy. d. méd. d. Belgique, 1906, xviii, 7; cited by Hess.

[77] Hess: Arch. f. d. ges. Physiol., 1907, cxviii, 536; Medizinisch-Naturwissenschaft, Arch., 1908, i, 161.

[78] Pratt, Lamson and Marks: Tr. Assn. Am. Phys., 1909, xxiv, 266.

In a dog killed two months after the operation the pancreas was shrunken to a hard mass about 3 cm. long which consisted almost entirely of dense connective tissue. The remains of dilated ducts and acini in scattered areas were present, but no islands of Langerhans remained. The dog did not develop diabetes and hence the internal secretion, if produced at all, must have had its origin in the acini. In a cat which died fifty-three days after the ducts were occluded no islands could be demonstrated, but the protoplasm of many of the acinar cells had lost their characteristic staining properties and the cells resembled in appearance those of the islands in a normal gland. The altered acini, rich in vessels and surrounded by connective tissue, might easily have been mistaken for islands of Langerhans if all transitions from normal acini were not present in the same section. In a dog which died between five and six months after the operation the entire gland, except a small portion near the duodenum, was converted into fibrous tissue with acini and islands entirely destroyed. The dog did not develop diabetes, although the bit of pancreatin tissue remaining contained no islands of Langerhans.

These observations seem to be irreconcilable with the island theory. How can its supporters explain the absence of diabetes when all the islands are destroyed?

If the conclusions of Ssobolew, De Witt and MacCallum were correct and the islands remain intact after tying the ducts it would be difficult for the advocates of the island theory to explain the rapid fall in the limit of assimilation for glucose, which within three weeks in one of our experiments[43] was from 125 gm. to 65 gm. Furthermore, as the marked changes described occur in animals without diabetes it is improbable that slight lesions in the acini, islands, and blood-vessels interfere seriously with the internal function of the pancreas. The severe alterations in the islands found in many cases of diabetes are probably of etiologic importance, although they may be secondary to unknown changes in the metabolism. There is no proof that severe lesions in the acini may not be of equal significance. The islands may be anatomically independent of the acini and yet not physiologically independent. No facts have yet been brought forward to make untenable the hypothesis that the acini as well as the islands of Langerhans may under normal or pathologic conditions produce the pancreatic internal secretion. Neither the island theory nor the acinar theory, nor yet the theory that diabetes may be due to lesions in either acini or islands, explains the many cases of diabetes in which no change occurs in the pancreas. As is well known, diabetes in early life is especially severe, yet in 50 per cent. of the cases in individuals under 30 years of age Cecil[73] found the pancreas normal. It is possible that diabetes without lesions of the pancreas is due to functional changes in the organ, but such a conclusion is pure conjecture, and savors of "learned ignorance."

If the views of Cohnheim[17] and Taylor[79] are correct it may be that the cause of the disease in these cases is not in the pancreas, but is due to a loss in the mass of the muscular ferment, or some disturbance in the relation between the pancreatic "activator" or "zymoexcitor" and the muscular ferment. It is probable that the disturbance in metabolism that occurs in pancreatic diabetes is more complex than present-day theories indicate.

SUMMARY

Despite opposing theories and conflicting observations in regard to the relation of the pancreas to diabetes some facts have been definitely ascertained.

The total removal of the pancreas always leads to a fatal diabetes.

Atrophy of the pancreas produced by excluding all the pancreatic juice from the intestine is associated with a marked decrease in the limit of assimilation for sugar.

Transplantation of a portion of the pancreas prevents the development of diabetes when the rest of the gland is extirpated.

Lesions of the islands of Langerhans are found in most cases of diabetes. They are usually associated with changes in the acini.

In the progressive atrophy which follows the occlusion of all the pancreatic ducts in dogs and cats both islands and acini are gradually destroyed.

All the islands may disappear without diabetes resulting.

The conclusion is justified that the pancreas has an internal function concerned with the metabolism of sugar.

The nature of this function, the relation of the islands of Langerhans to the acini, the significance of histologic changes in both structures, these and other problems still await solution.

313 Beacon Street.

[THE PRECEDING ARTICLES ARE PART OF A SYMPOSIUM ON DIABETES WHICH IS CONCLUDED FURTHER ON IN THIS ISSUE.]

HAIRY OR BLACK TONGUE *

M. L. HEIDINGSFELD, M.D.
Professor of Dermatology at the University of Cincinnati; Dermatologist to the Cincinnati Hospital, etc.
CINCINNATI, O.

The subject of hairy or black tongue has engrossed a varied degree of attention in dermatologic literature. A comparatively large number of the cases, chiefly from French and English sources, were reported at the time of the discovery and early mention of the affection. Brosin[1] recorded some forty odd cases reported prior to 1888. The next large increment of cases occurred when investigators first took issue in regard to its parasitic or non-parasitic nature, which has remained a more or less unsettled point of contention to the present day. Relatively few cases have been reported in recent years, not so much because the affection is possibly more rare or exceedingly infrequent as because little additional information could be offered regarding its etiology, pathology and treatment. There are scarcely a hundred cases recorded in the literature at the present time, and if the spurious and unauthenticated cases were eliminated the remainder would probably not total much more than half that number. The earliest report of the affection probably emanates from Rayer,[2] who in 1835 described, under the name *discolorations pigmentaires,* several cases of black discoloration of the dorsal surface of the tongue. Eulenberg[3] in 1853 described a black-coated tongue (*eine schwarze Zungenbelag*) in a 2-year-old child affected with diarrhea, which persisted for several months. He first called attention to involvement of the filiform papillæ, a feature more carefully elaborated later by Gubler.[4] St. Germain[5] in 1855 reported some transient cases of short duration in debilitated individuals, under the name *nigrité de la langue.* Raynaud[6] in 1869 independently described several cases as a new affection, and first ascribed to the condition a parasitic cause. He pictured mycelia and spores, unlike any previously described. As soon as Raynaud attributed a parasitic etiology interest in the affection materially increased; Gallois[7] was unable to confirm Raynaud's observations, and Richter[8] states that he had observed the tongue epithelium to develop into thick, black, cylindrical "turf" (*Rasen*) without ever being able to discover Raynaud's fungus. Féréol[9] likewise found no evidence of spores in his case, and stated that their presence in hairy tongue must be of accidental rather than etiologic character. He considered the hypertrophy of the filiform papillæ the essential pathologic feature, and called the affection *l'hypertrophie épithéliale filiforme.* Within a few years Laveau,[10] Lancereaux,[11] and Dessois[12] reported some cases with which they confirmed Raynaud's parasitic etiology. Dessois attempted to confirm the parasitic nature of the affection by inoculation experiments on his own tongue, which, however, proved negative in character. He named the affection *glossophytie.* Rayer reported that not only were inoculation experiments negative, but morphologically similar spores were present on normal tongues. Pellarez,[13] a Spaniard, erroneously regarded the condition as a vegetating growth and Salter[14] ascribed the discoloration to an anomaly of pigmentation. Butlin[15] believed the fungi normally found in the mouth could, under special conditions, impart a black discoloration to the coating of a tongue. Schech[16] described the discoloration under the microscope as light to dark brown and diffusely distributed over the hairs, without being interspersed with sharp, distinct accumulations of pigment or areas free from pigment. The hairs consisted of thickly crowded masses of long, thin epidermic cells, with a marked tendency to bristle and branch at the borders. They set forth the greatly enlarged, cornified and pigmented filiform papillæ. A remarkable feature was the absence of fine granular masses of cocci, bacilli and leptothrix, which are a part of the normal coating of the tongue. Schech found no evidence of fungi in support of Dessois and Sell and was obliged to retract his former expressed views regarding its mycotic character. Brosin[1] regarded the affection as a hypertrophy of the papillæ filiformes, with abnormal pigmentation and keratosis of the affected tissue. This view was supported by Rosenberg,[17] Rydygier,[18] Wollerand,[19] Surmond,[20] and others, and their studies revealed the presence of many forms of micro-organisms of incidental and non-pathogenic significance.

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[79] Taylor: Author's abstract of paper read before Assn. Am. Phys., May, 1910.

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

[1] Brosin: Monatsh. f. prakt. Dermat., 1888, vii, No. 1, Ergänzh., p. 5.

Those who have confirmed the parasitic nature of the affection in more recent years are Roth,[21] who found a micro-organism abundantly present in two cases, to which he attributed the discoloration, and called the affection a keratomycosis. Dinkler[22] disclosed the presence of a filiform bacillus, but was unable to cultivate it. Lake[23] detected the presence of round spores. Ciaglinski and Hawelke[24] and Senziak[25] were able to cultivate a black fungus to which they attributed etiologic importance, but only at room—not at body—temperature. Rostowjew[26] describes in his two cases, in addition to the ordinary mouth bacteria, a peculiar cladothrix, the cultures of which were black. Much infectious significance is attributed by Rostowjew to the occurrence of the affection in husband and wife. Gottheil[27] illustrates the spores in his case, which showed only a black discoloration of the tongue, without a coat of hairlike prolongations. Lucet[28] describes the presence of small round or oval double contoured, highly refractive bodies, with hyaline or finely granular contents. They stained with compound solution of iodin and grew luxuriantly on 5 per cent. glucose agar at 37 C. Inoculation experiments on rabbit tongues were negative. Gottheil named the fungus *Saccharomyces linguæ pilosæ.* Gaston and Laselet[29] believed that the cause of the black discoloration was a fungus which they successfully cultivated. Guéguen[30] is the latest observer to attribute this affection to a hitherto undescribed organism, the *Oospora lingualis.* Equally large is the number of present-day observers and investigators, who either ignore or regard as untenable the theory of the parasitic origin of the affection and attribute it to other causes. Levisseur[31] attributed the cause in his case to use of silver nitrate and chromic acid in the treatment of syphilitic plaques. Schnabel[32] and Schourp[33] regard the affection as a common one among syphilitics, dyspeptics and tobacco users. Audry and Dalous[34] and Hallopeau[35] have observed the affection in cases of Darier's disease. Mourek,[36] in his carefully reported and investigated case, states that micro-organisms were found sparingly and gave no evidence of anything of characteristic significance. The bacteriologic investigation was of negative character. He believed the process is a hyperkeratosis and the discoloration the result of contact with food and other extraneous products. The epithelial cells cohered and became mechanically discolored, as in other keratotic affections of the skin. Vollmer[37] states that though the etiology and mode of production is obscure, he is of the opinion that syphilis, mercurialization, strong disinfectants, tobacco, etc., are predisposing factors. He regards the parasitic etiology as untenable.

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[2] Rayer: Traité théorique et pratique des maladies de la peau, 1835, iii, 573, article Nigrité.

[3] Eulenberg: Arch. physiol. Heilk., 1853, xvi, 490.

[4] Gubler: Bouche (Séméiologie) Dict. de Dechambre, 1869; quoted by Brosin: Note 1.

[5] St. Germain: Compt.-rend. Acad. d. Sc., 1855, March 28.

[6] Raynaud: Séance de la Soc. med. d. hôp., Feb. 26, 1869.

[7] Gallois: Séance de la Soc. de Biologie, Aug. 7, 1869.

[8] Richter: Krankenmachende Schmarotzepilze, Schmidt's Jahrb., 1871, cli.

[9] Féréol: Séance de la Soc. méd. d. hôp., June 25, 1875.

[10] Laveau: De la langue noire, Thèse de doctorat, Paris, 1876; quoted by Brosin, Note 1.

[11] Lancereaux: Séance de la Soc. méd. d. hôp., Dec. 8, 1876.

[12] Dessois: De la langue noire, Thèse de doctorat, Paris, 1878; quoted by Brosin, Note 1.

[13] Pellarez: Gaz. méd. de Paris, 1879, No. 52 (abst.).

[14] Salter: Todd's Encylopedia of Anatomy and Physiology, 1852, No. 6.

[15] Butlin: Diseases of the Tongue, 1885, p. 31.

[16] Schech: München med. Wchnschr., 1887, No. 14, April 5.

[17] Rosenberg: Quoted by Mourek: Arch f. Dermat. u. Syph., 1894, xxix, 369.

[18] Rydygier: Beitrag zur selteneren Erkrank. der Zunge, Arch. f. klin. Chir., 1891, No. 41, p. 767.

[19] Wollerand: Sur la langue noire papillaire, Virchow's Arch. f. path. Anat., xxv.

[20] Surmond: La langue noire, Gaz. d. hôp., 1891.

[21] Roth: Wien. med. Presse, 1887, p. 935.

[22] Dinkler: Ein Beitrag zur Pathologie der sogenannten Schwarzen Haar-Zunge, Virchow's Arch. f. path. Anat., cxviii.

[23] Lake: Black Tongue, Brit. Med. Jour., 1891, p. 546.

[24] Ciaglinski and Hawelke: Beitrag zu einer seltenen Erkrankung der Zunge, Ztschr. f. klin. med., 1893, xxii, 626.

[25] Sendziak: Beitrag zur Etiologie der sogenannten Schwarzen-Zunge, Monatsh. f. Ohrenh., 1894, xxviii, 112.

[26] Rostowjew: Hospitalz. Botkin, 1896, No. 8.

[27] Gettheil: Arch. f. Pediat., 1889, p. 255.

[28] Lucet: Arch. de parasitol., May 20, 1901.

[29] Gastou and Laselet: Tr. de Soc. Franç. de dermat. et de syph., March 18, 1909, xx, No. 5.

[30] Guéguen: Arch. de parasitol., 1909, xii, No. 8.

[31] Levisseur: New York State Jour. Med., 1899, xlix, 42.

[32] Schnabel: Haar-Zunge, Inaug. Dissert., Leipzig, 1904.

[33] Schourp: Monatschr. f. Harnkr. u. sex. Hyg., iii, No. 2.

[34] Audry and Dalous: Jour. de mal. cutan., 1904, xvi, 801.

[35] Hallopeau: Ann. de dermat. et. de syph., 1896, series 3, vii, 744.

[36] Mourek: Arch. f. Dermat. u. Syph., 1894, xxix, 369.

REPORT OF CASES

CASE 1.—On May 25, 1909, Mr. A. D., aged 85, was referred to my attention for a peculiar discoloration of the tongue, which was the site of severe subjective pain and discomfort. Examination revealed a brownish-black discoloration extending anteriorly from the circumvallate papillæ to within almost one inch of its tip, and one-half inch of the right lateral border. The affected area was irregularly elliptical in outline, situated for the most part on the right side of the tongue, but slightly transgressed the median line at its middle third. The patch was black at its center with borders that gradually faded from brownish-black to yellowish-brown. The remainder of the tongue and the mucous membranes of the mouth were bright red and normal in appearance. Salivation was very marked, and the patient complained severely of intense pain in the tongue, which was also referred to the ears. The patch was thickly covered with a soft, felt-like coating of hair-like processes, which on more careful examination and inspection were found to be inextricably interwoven and matted together. in the manner of "a field of grain laid low by storm and wind" as previously described by Gubler, Raynaud, Stokes and Lake. An abundance of long hairy filaments, some of which measured ¾ of an inch in length, could be readily removed with thumb forceps. The patient, an intelligent German, stated that his personal attention was first directed to his tongue, some two months prior to the time of the examination, by pain and a sense of soreness in the tongue, and the black discoloration was then in evidence in its present unchanged form. No history of its incipiency or probable duration was obtainable.

Biopsy.—On May 28 a biopsy was made for histologic study. Patient was observed daily. The pain became more intense and salivation more marked. On June 3 a marked swelling manifested itself at the left lateral border of the tongue near its middle third and remote from the hairy involvement; the mass, which was deep-seated in origin, was firm and hard in consistence, irregular in outline. The lesion was diagnosed as an epithelioma and the case referred to a surgeon. The subsequent history confirmed this diagnosis. As soon as ulceration took place the patient experienced some sense of relief from his distressing pain. On Feb. 15, 1910, the bed-ridden patient was still alive, although the disease had made great inroads on his previous fairly robust constitution; death eventually took place March 5, 1910. The complicating malignant growth in this case was, without question, a mere coincidence, and has its analogue in a case of a 49-year-old brickmaker, reported by Lediard, who had an epithelioma at the tip of the tongue remote from the pathologic hairy area.

CASE 2.—R. K., aged 19, was first seen in consultation April 6, 1905. Patient stated that three months previously he noted an abnormal sensation in the tongue, resembling the presence of a foreign body on the surface which could not be dislodged. On looking into a mirror he noted for the first time the black discoloration, became alarmed and forthwith brought the condition to the attention of his physician. The examination revealed an intense blackish discoloration of the tongue, with borders imperceptibly fading to brownish-yellow, occupying a triangular area, extending from the circumvallate papillæ anteriorly along the median dorsal surface of the tongue almost to its tip and lateral borders. The same soft felt-like coating of matted hair-like processes was observed as in the previous case, and a specimen was removed and preserved in alcohol for histologic examination. Pain and distress were entirely absent, and there were no subjective symptoms except as already noted. Patient was last observed in Jan. 15, 1910, and during the intervening five years no appreciable change was detected in the clinical appearance of the tongue. Patient persistently refused a biopsy, but readily permitted the removal of large numbers of hairy processes, some of which measured fully ¾ of an inch in length. Syphilis was absent and there was no history of drug-taking, or the use of caustic or astringent applications.

In addition to these two well-defined clinical cases it has been my privilege to observe several cases of less marked character in connection with conditions of general dermatologic interest. The patients were, almost without exception, unaware of or at least indifferent to the manifestations on the part of the tongue, which were revealed merely by process of routine examination, and doubtless would have been dismissed with passing notice had not the unusual interest of the condition been understood. In most cases there was at least a moderate amount of felt-like covering, of hairy growth, in addition to the brownish or blackish discoloration, and hairs from ⅛ to ¼ of an inch could be readily removed and floated in water or alcohol. In some cases there was mere discoloration without an associated hairy growth, as reported by Gottheil, Stokes, Ciaglinski and Hewelke and Sendziak. This discoloration was soft, mushy in character, and could be freely but somewhat incompletely removed by light scraping. The cases occurred for the most part in early syphilitics and were observed in the process of the examination of the tongue for the presence or absence of mucous plaques, or the coated or non-coated state of the tongue in non-syphilitics. All of the cases occurred in males. Most, but not all, of the syphilitics were using at the time astringent and antiseptic mouth lotions. The patches disappeared, however, in some of these cases, in spite of the persistent use of the astringent antiseptic mouth lotions.

One patient, affected with gonorrhea but not with syphilis, was taking sandalwood oil internally, but the patch persisted for some time after the internal administration of the oil was withdrawn. It disappeared entirely after a lapse of several months.

In two cases syphilitic infection was of long standing; one patient had an extensive leucoplakia of the tongue and these areas were free from the yellowish-brown discoloration, which occupied an irregularly oval area near the center, anterior to the circumvallate papillæ. Most, but not all, of the cases occurred in patients who used tobacco immoderately. Dietary indiscretions and gastrointestinal disturbances were in evidence in the majority but not in all of the cases. The patches were evanescent and transient in all the cases, fading or disappearing without treatment and attention, and occasionally relapsing from untoward local or general influences. These cases lacked the clean-cut clinical characteristics of the first two well-defined cases, in which the color was more intense, the hairs longer, more numerous and interwoven, the patches thicker, more fur-like and sharply defined and more persistent and stable in character. I am inclined to believe that several of the cases reported in the literature belong to this second class of—if I may be pardoned the term—spurious or pseudo cases.

Microscopic Examination.—The microscopic appearance of the hairy-like filaments was fairly constant, when compared with each other and with those described in the literature. Specimens from the pseudo—or spurious—cases could not be differentiated microscopically, except for length and thickness, from those of the two well-defined ones. Specimens unstained and stained by various methods were examined; the unstained specimens, for the most part, showed a more regular and better preserved outline The color of the unstained specimens is a diffuse yellowish brown—as already noted by Schech, Mourek, and others

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[37] Vollmer: Arch. f. Dermat. u. Syph., 1898, xlvi, 13.

The outline is an elongated cylinder, hair like in general appearance The resemblance to a hair is accentuated in many instances by the presence of a zone analogous to the medullary canal In many there are several of these zones of varying color intensity, and on close examination they are found to owe their presence to the fact that a single filament is often composed of two or more closely united shafts These shafts are united the greater part of their entire length, they become separate and distinct from each other a short distance from the distal extremity, imparting a peculiar tuft like appearance, not altogether unlike that observed in a pineapple (Fig 1, A) Occasionally one of the united shafts will become dissociated at some more median point, and impart an appearance not altogether unlike that of the leaf to a stalk of Indian corn (Fig 1, D) The resemblance to Indian corn becomes more marked if there are several lateral dissociations

Lateral deviations have been noted by Schech and other early observers On closer examination under higher magnification the filaments are observed to be composed of thin, non nucleated, stratified, closely superimposed epithelial cells Their cornified, non nucleated character can be confirmed if the filaments are macerated with gentle heat in a solution of potassium hydroxid The individual cells are superimposed in such a way as to produce serrated borders, the serrations are constantly directed downward, producing a peculiar tesselated effect, which can be compared to the scales on the surface of a pineapple This imbricated character has been frequently noted in the literature, it is not marked enough to conjure up the resemblance of a row of inverted funnels as described by Brosin, nor is their order, as he states, ever reversed, so that they partake of the appearance of a harpoon or trident For similar reasons the spike like appearance or resemblance to the head of a wheat stalk described by Mourek, is not to be discerned, surface indentations were not observed to recall the "corncob" effect described by Levisseur The serrations at the border are directed toward the base and away from the rounded and cleft extremities constantly enough to permit a ready differentiation of the distal from the proximal extremity

In well stained specimens the filaments were observed under oil immersion to be thickly studded with masses of cocci which morphologically resembled the common pus germs They were present in exceedingly large numbers, were intracellular and extracellular, and often in such density as to resemble pure cultures of the common staphylococci Larger and more deeply stained cocci and diplococci were interspersed here and there together with bacilli leptothrix, and various forms of organisms commonly found in the mouth In addition to the various stained micro organisms, a few large round, highly refractive, double contoured bodies, some larger, some smaller, often in such proximity as to impart a budding character, were observed here and there in most of the specimens examined They were not numerous enough to assume pathogenic importance, and to all appearances their presence partook of a coincidental character Some unrecognizable fungi and micro organisms were also observed the micrococci, however, predominated greatly over all other forms

Culture Experiments—Culture experiments were attempted in both genuine and spurious cases The affected surfaces were carefully sponged with ether and 5 per cent glucose agar, nutrient agar and blood serum were carefully inoculated with removed filaments and platinum loop inoculations from the affected area Some of the cultures were kept at 38 C , others at room temperature

The cultures uniformly remained sterile or became the seat of innumerable, small, glistening, white, superficial colonies, which morphologically and microscopically resembled in every particular *Staphylococcus albus* No fungus was evident even on prolonged standing in any of the cultures examined

Histology—A biopsy was obtained only in Case 1, and the histologic report with accompanying illustrations, is the first, to my personal knowledge to be recorded for the affection Under low power the filaments when cut vertically and longitudinally to their long axis are observed to reach upward and forward in irregular parallels (Fig 2) Many of the intertwined filaments are cut transversely and obliquely The filaments preserve for themselves a feather like appearance When cut transversely to their long axis their continuity is preserved only a short distance and most of them appear as small, round or oblique fragments The filaments can often be directly traced to their origin from papilla like projections of the stratum corneum The stratum corneum elongations promptly take on a fringe of serrated, more loosely arranged and deeper staining cells, they often coalesce within a short distance of their proximal extremities with one or more adjacent filaments, to form double, triple, or quadruple filaments Acanthosis is another marked pathologic feature The rete and the papillæ are considerably hypertrophied, and there is a very extensive downward prolongation of almost every fourth, fifth or sixth interpapillary process of the rete Malpighii The lower layer of columnar cells is sharply defined, well preserved and in a state of active proliferation The pars papillaris and subjacent tissue, are entirely devoid of any marked pathologic change save a diffused, mild infiltration of inflammatory products the distribution of which is limited almost exclusively to the pars papillaris

One of the most striking pathologic changes, and possibly second in importance only to the filaments, is the formation of papillæ like bodies within the rete Malpighii (Fig 3) They are differentiated from the rete, in which they are situated, by a well defined layer of more deeply stained columnar basal cells Their well defined interpapillary spaces are devoid of fibro connective tissue and filled with epithelial cells of the rete They are further differentiated from normal papillæ by their diminutive type If cut obliquely or on cross section they partake of the appearance of epithelial nests (Fig 4), and it is not unusual to note six to twelve or more of such nests clustered in a circle If cut longitudinally they can be traced directly to the surface to points where the filaments take their origin (Fig 5) Having assumed that these intra epithelium-placed papillæ are the origin of the hairs, I have termed them "epithelial founts"

The stratum corneum is more or less imperfectly preserved In some places it is of normal thickness structure and staining properties and covers a fair extent of surface In places it is almost entirely lacking, and, when present, rises perpendicularly from the surface to form the proximal extremities of the hair like filaments Where it is preserved, it is often covered or partially covered with a thick layer of partially stratified, nucleated epithelial cells Groups of degenerated cells are occasionally observed at the tips of the papillæ or in the epidermis near the papillary border (Fig 6) These cells are often surrounded by a single layer of endothelial cells, their yellowish color, small homogeneous appearance, angular outline, with interspersed darkly stained lymphocytes, indicate that they are blood accumulations Inasmuch as such accumulations have been observed and recorded in the corneous substance of cutaneous horns by Joseph and others, the analogy is plausible These "blood cavities" and the rete papillary border occasionally contain large rounded hyaline or faintly granular, double culture bodies, which are apparently cell degenerations, rather than pathogenic spores, although they bear a morphologic resemblance to spores to which pathogenic importance has been attributed (Fig 7) They are often embedded in a mass of large, edematous, vacuolated cells situated at the papillary border of the epidermis, which resemble the degenerative cell changes in Paget's disease

The pathology cannot be dismissed without a brief comparative reference to cutaneous horns, ichthyosis hystrix, leptothrix and hair The histopathologic similarity which some of these affections bear to hairy tongue is remarkable to the degree with which their clinical characteristics are dissimilar, and *vice versa,* the affections which preserve the greatest degree of clinical resemblance show the least histopathologic resemblance. Cutaneous horns, which have clinically little or nothing in common with hairy tongue, have much in common pathologically They are composed of masses of cornified, or at least partially stratified, epithelial cells, arranged with wonderful cohesion into dense elongated columns, row after row separated by valley-like clefts, resembling the medullated canals of hair. Intra-epithelial spaces containing blood are also observed. The origin is purely epidermal, and the base rests on and apparently is developed from intra-epithelially placed papillæ and interpapillary processes resting above the area of the true papillæ, and true interpapillary processes, unless the latter, have disappeared from pressure atrophy. The former papillæ and inter-papillary processes correspond to the intra-epithelially placed "epithelial founts" of hairy tongue.

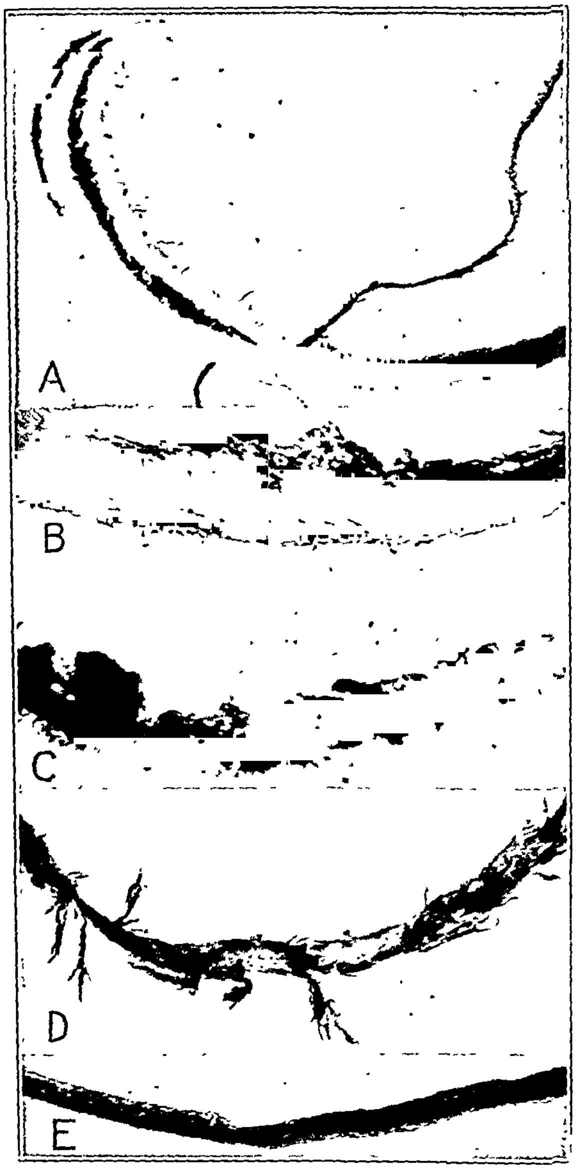

Fig. 1.—Specimens from patient with hairy or black tongue: A, separated from each other at the extremity; appearance, tuft-like; a single hair composed of several closely united shafts; B, stained hair of considerable size; C, unstained filament coated with loose masses, composed largely of micro-organisms; D, hair resembling in appearance a stalk of Indian corn; E, one-half of hair measuring ¾ inch; tenfold magnification.

Ichthyosis hystrix, which preserves possibly more clinical than histopathologic resemblance to hairy tongue, preserves little histologic similarity except a marked hyperkeratosis. The hyperkeratosis, however, is arranged parallel rather than perpendicular to the surface and the spinous processes are the result of keratotic accumulations, spread irregularly over the surface of four or five hypertrophied papillæ. The inflammatory exudate is more perivascular, less diffused in character and more circumscribed to the capillary vessels of the pars papillaris.

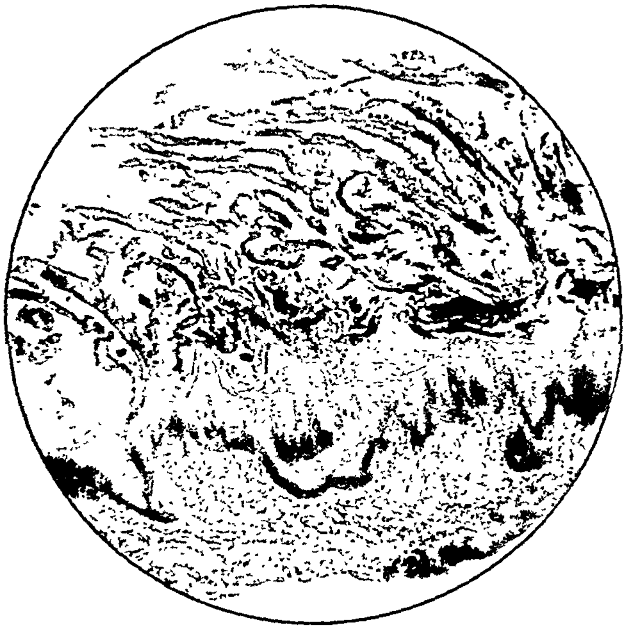

Fig. 2.—Hair-like filaments cut vertically and longitudinally to their long axis. Many intertwined filaments cut obliquely and transversely. Filaments reach upward and forward in irregular parallels.

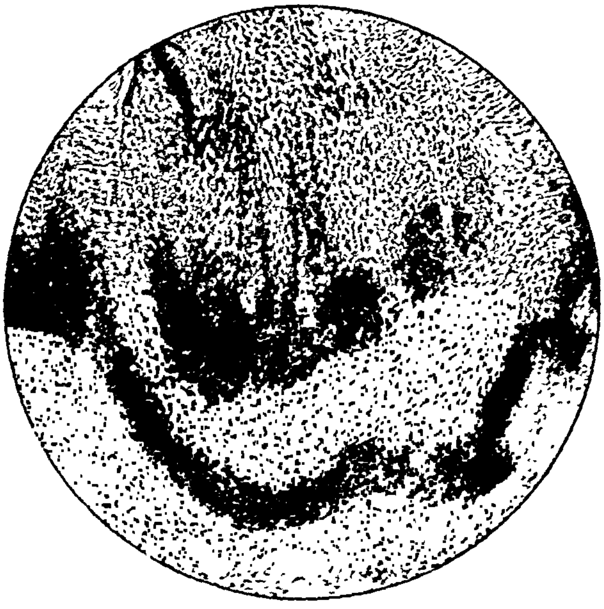

Fig. 3.—Papilla-like bodies within the rete Malpighii; probable origin of hair-like filaments.

Leptothrix, which has little or nothing clinically in common with hairy tongue, shows a striking resemblance under the microscope, in that the affected hairs are coated with an accumulation of loosely adherent cells and detritus, containing myriads of micrococci and other micro-organisms. The morphologic resemblance, under the microscope, of hair affected with leptothrix to the filaments of hairy tongue is very striking. An additional point of resemblance is the discoloration, which in leptothrix is often yellow or red, and in hairy tongue, black to brownish-yellow. Pathogenically there can be little in common in the two affections. The *gross* clinical resemblance which filaments bear to hair is striking enough and gives the affection a misnomer. Remarkable in many of its microscopic features, the resemblance is microscopically and histopathogenically a paradox that requires no comment. In origin, development, essentials of structure and pathogenesis they naturally share nothing in common with hair.

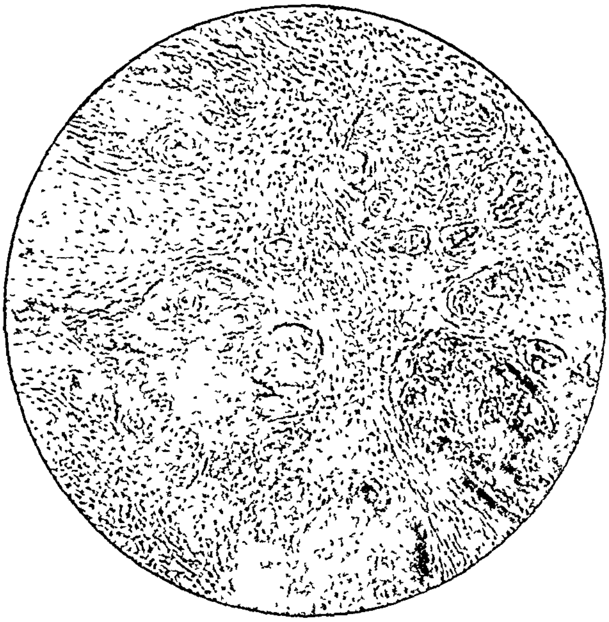

Fig. 4.—The same papilla-like bodies cut transversely and imparting the appearance of epithelial nests clustered in circles.

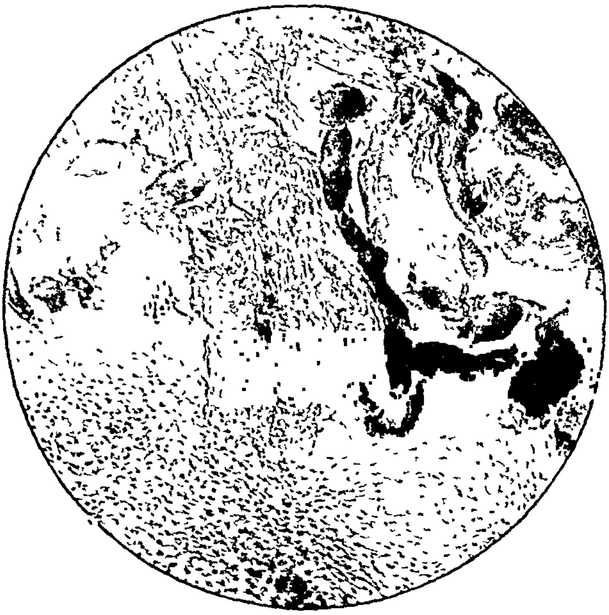

Fig. 5.—Superficial origin of the hair-like filaments.

GENERAL DEDUCTIONS

Hairy tongue can be conveniently divided into two general classes: (1) true, idiopathic, or genuine cases, characterized by well-defined stable, black-brown or yellow-brown, thick, soft, fur-like patches covered with densely intertwined hair-like filaments, easily measuring from ¼ to ½ inches in length; and (2) false, pseudo or spurious cases, characterized by thickish, yellow-brown or greenish discolorations, of unstable evanescent character, covered with a soft mushy detritus, occasionally containing short filaments measuring ⅛ to ¼ of an inch in length. The true cases owe their origin to some anomaly of development, probably of congenital nature, in the sense that the germinal products from which they are developed are present from birth, but do not undergo growth and developmental changes until early adolescence or some later period in life. Such an

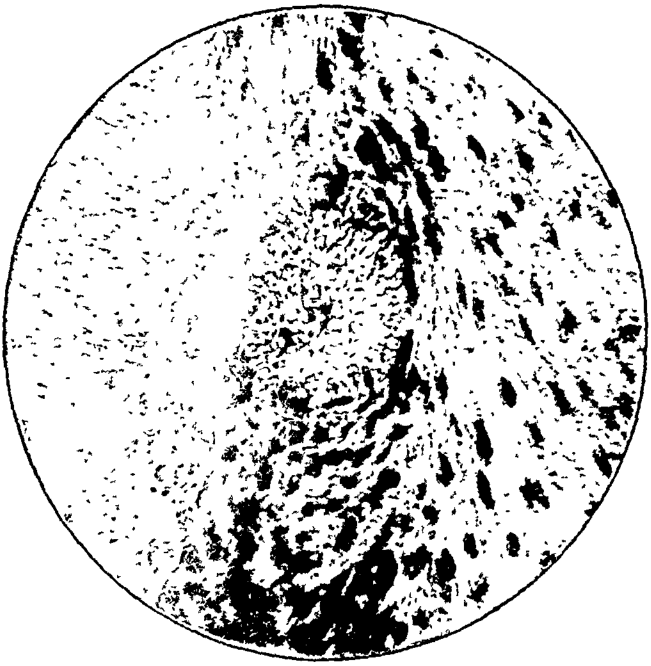

Fig. 6.—Blood cavity strongly magnified, showing its intra-epithelial position. Cavity is lined with a layer of endothelial cells.

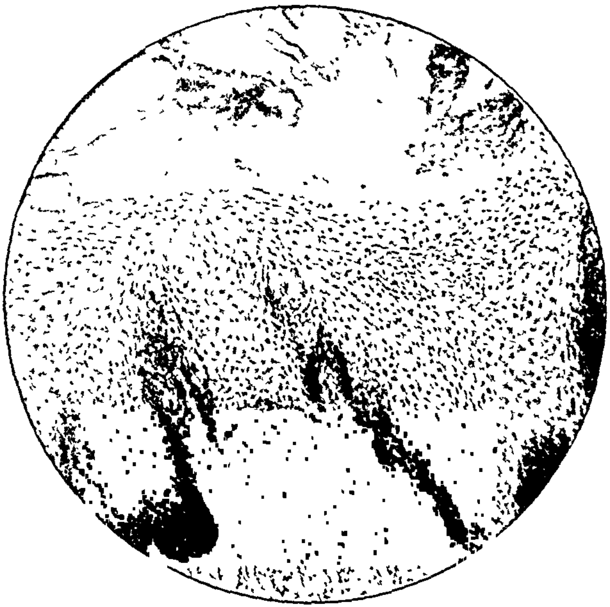

Fig. 7.—Small blood cavity within the epidermis with areas of edematous and degenerated epithelial cells at the rete papillary border.

origin is assumed and very generally conceded for moles, vascular, pigmented papillomatous and unilateral nevi. cutaneous horns,[38] etc., and can be extended with equal propriety to this affection, all the more since the histopathology reveals an anomaly of development (whose striking similarity to cutaneous horns has already been alluded to) rather than any evidence of an infectious or inflammatory nature. An anomalous development and congenital origin is further evidenced by the fact that the true, idiopathic or genuine cases are of stable character, and remain unchanged in size and form for indefinite periods, and localized to definite areas. Such would not likely be the case if they were of infectious origin or of inflammatory character resulting from local or general causes.

The pseudo or spurious cases are unstable and evanescent and probably owe their origin to such local or general irritating and infectious causes as tobacco, antiseptics, astringents, syphilis, etc. The presence of the filaments is probably due to an inflammatory hypertrophy of the papillæ filiformes. These cases in varying degree of intensity can be frequently noted, particularly in the early stages of syphilis, and constitute no uncommon affection. The diagnosis can be easily confirmed by removing some of the grumous coating of discolored tongues by means of fine forceps, and floating it in clear water or alcohol. The hair-like filaments can then be readily seen with the naked eye. The majority of cases recorded in literature probably belong to this group. A parasitic origin for the affection could not be established on either clinical, histopathologic or bacteriologic grounds; it does not develop or spread clinically like a parasitic affection. Inoculation experiments were negative in the sense that the affections could not be distributed to other unaffected parts of the tongue. It failed to spread to the abrasions and excoriations of an intercurrent cancer of the tongue. The histopathology reveals chiefly anomalous structural changes, and the absence of the marked inflammatory changes generally incident to chronic and acute infectious and localized irritations. The fundamental abnormality is the presence of abnormal papillæ, and interpapillary processes or "filament founts" situated within the epidermis, from which the abnormally elongated, stratified and keratosed filaments trace their direct origin. Some of the basal cells at the papillary-rete border showed vacuolated and edematous change, to which, however, no special significance could be attributed. The filaments were freely studded with micro-organisms which resembled *Staphylococcus albus* morphologically, to which likewise no special significance could be attached. A few double-contoured bodies were occasionally observed among the filaments and in the deeper structures, to which no important significance was attributed. The bacteriologic findings were, as already stated, sufficiently negative in character to preclude, in my opinion, a parasitic etiology for the affection.

19 West Seventh Street.

Ocular Chancre.—Chancres of the eyelids may be palpebral or conjunctival. A chancre situated on the ciliary border of the eyelid may be mistaken for a stye. Conjunctival chancre is more often situated on the palpebral than on the ocular conjunctiva, and generally causes conjunctivitis, chemosis, and eversion of the eyelid. Chancres situated at the outer angle of the eye cause enlargement of the preauricular gland; chancres of the inner angle of the eye cause enlargement of the submaxillary glands.—C. F. Marshall, in the *Practitioner*.

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[38] Philip: Monatsh. f. Prakt. Dermat., 1904, xxxix, 630.

THE COMPARATIVE PATHOLOGY OF HYPERPLASTIC AND SUPPURATIVE ETHMOIDITIS *

ROSS HALL SKILLERN, M.D.
PHILADELPHIA

Last year, when the subject of hyperplastic ethmoiditis, in contradistinction to the suppurative type, was presented before one of our laryngologic societies, the question was raised as to whether these conditions were not

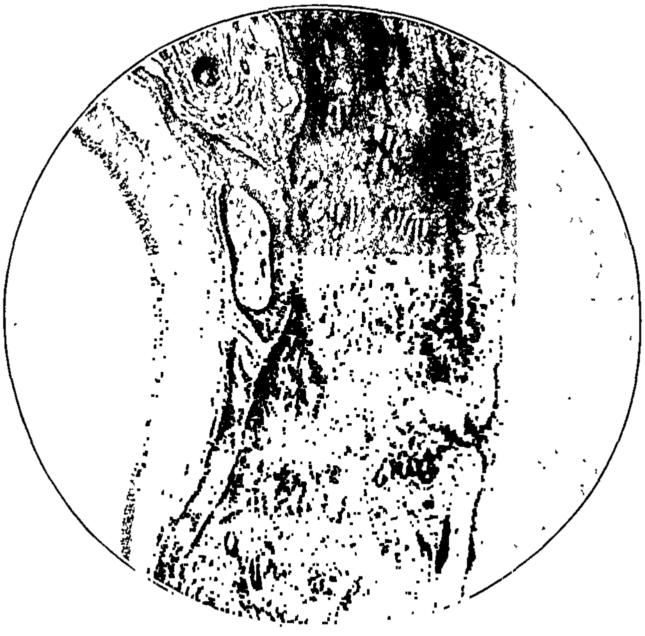

Fig. 1.—Chronic hyperplastic ethmoiditis; processus uncinatus, early stage; beginning polypoid hypertrophy on free border which forms portion of hiatus semilunaris; internal or nasal portion not yet affected.

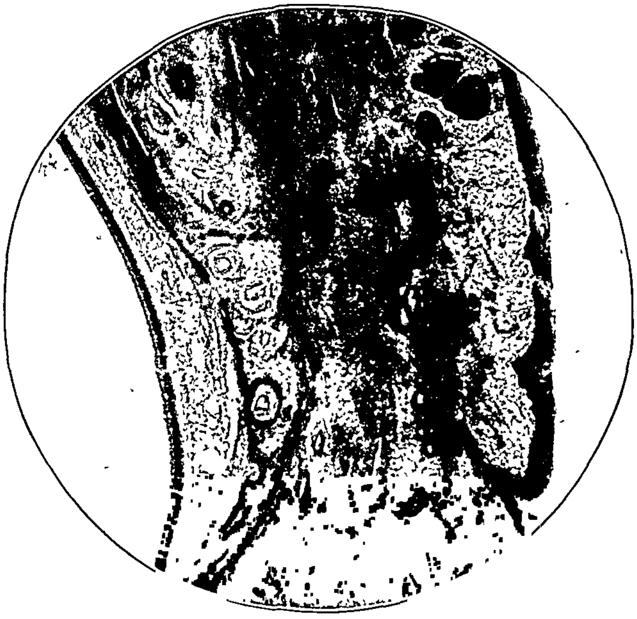

Fig. 2.—Chronic hyperplastic ethmoiditis, later stage. Considerable round-cell infiltration through the polypoid hypertrophy; great infiltration around the glands and blood vessels; medullary spaces infiltrated.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* From the McManes Laboratory of Pathology, University of Pennsylvania.

identical, or that one was merely a sequela or a complication of the other, as the case might be. It is my intention to bring before you to-day the microscopic pathology of these two conditions and show that the ethmoidal structures and their components are, under certain conditions, dissimilarly affected, and, indeed, often in diametrically opposite ways pathologically. Unfortunately for the argument of our contentions these two conditions can and often do occur simultaneously; i. e., a chronic hyperplastic ethmoiditis may become infected, thus giving us the picture of suppurative ethmoiditis with polyposis. The old question as to the precedence of the polyps of the secretion is, of course, clear in these cases. That the polyp formation in hyperplastic ethmoiditis may occur entirely dissociated from any purulent secretion, past or present, can only be substantiated by the veracity of the patients who have come under observation presenting this form of disease.

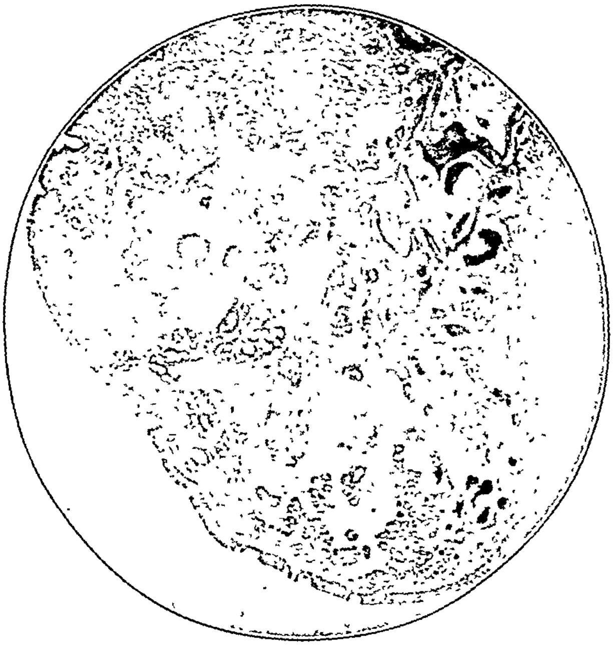

Fig. 3.—Chronic hyperplastic ethmoiditis (end of middle turbinate). Beginning polypoid hypertrophy at extreme end; round-cell infiltration practically absent; ciliated epithelium not affected.

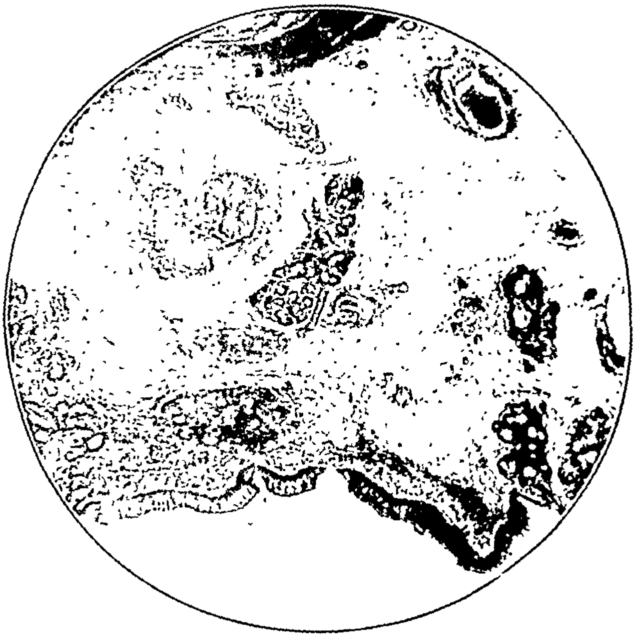

Fig. 4.—Chronic hyperplastic ethmoiditis (base of ethmoidal capsule). Advanced changes; intense round-cell infiltration in basement layers and around glands and blood vessels; periosteum also affected.

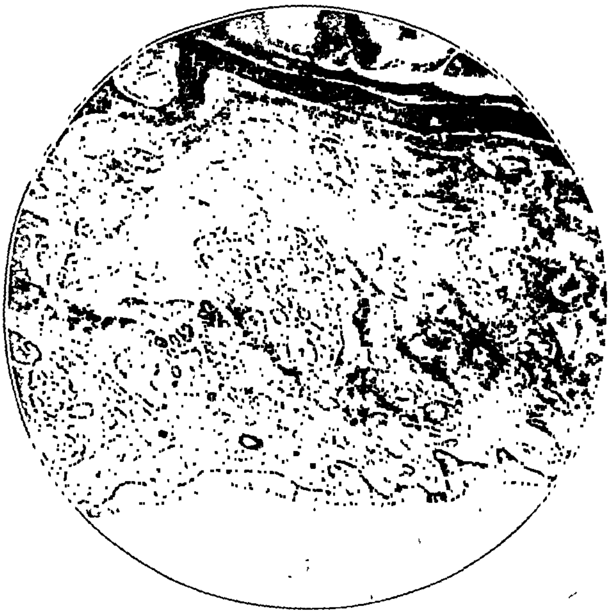

Fig. 5.—Chronic suppurative ethmoiditis (base of ethmoidal capsule). Advanced changes; intense fibrous tissue formation extending from periosteum outward enclosing vessels and glands and reaching almost to basement membrane; moderate round-cell infiltration in outer layers; beginning atrophy of glands.

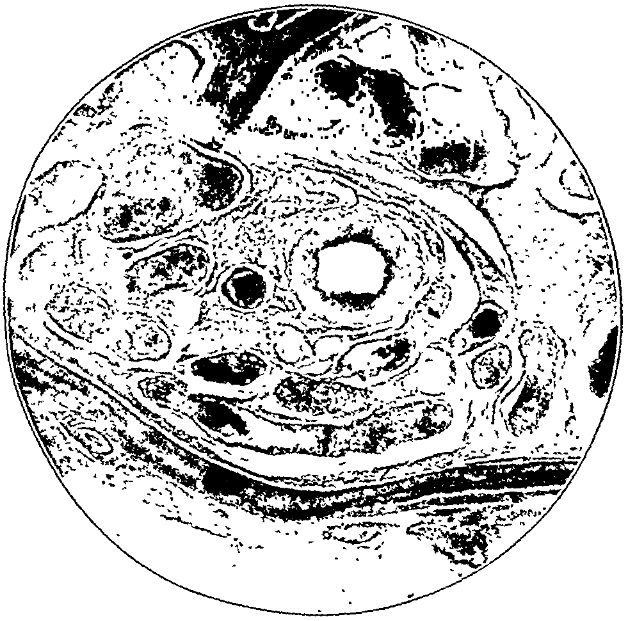

Fig. 6.—Chronic hyperplastic ethmoiditis (medullary spaces, base of ethmoid), hyperemia of entire contents of medullary spaces; proliferation of endosteum; veins distended with blood; lymphatic vessels distended; fibrous tissue formation around arteries.

The discussion as to the relation of polyp formation to empyema, particularly that of precedence, can only be referred to at this place; however, we have all seen empyemas without a vestige of polyp formation, and, on the other hand, polyps springing from the ethmoid region with no traces of pus. The latter class is the one to which objections seem to have been raised as to the presence of previous suppuration, and on this point we must of necessity rely on the veracity and understanding of our patients.

Briefly reviewing the macroscopic pathology of hyperplastic ethmoiditis, it may be defined as a polypoid inflammation of both the lining and external mucous membrane of the ethmoid cells, which may or may not present free polyps hanging from the ethmoid capsule. It is primarily never associated with a purulent secretion, but rather one of a thin, watery consistency, its profuseness being in direct relation to the severity of the disease (area of tissue involved).

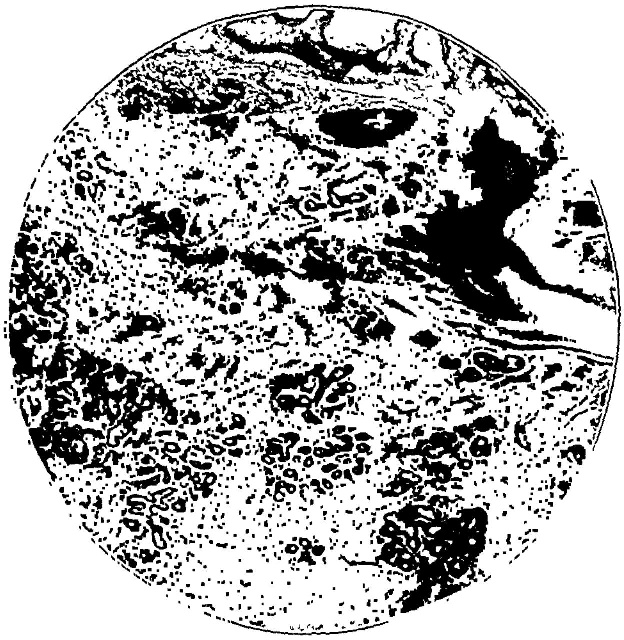

Fig 7.—Chronic suppurative ethmoiditis. Changes in submucous tissue; considerable round-cell infiltration; marked atrophy of glands; beginning fibrous tissue formation.

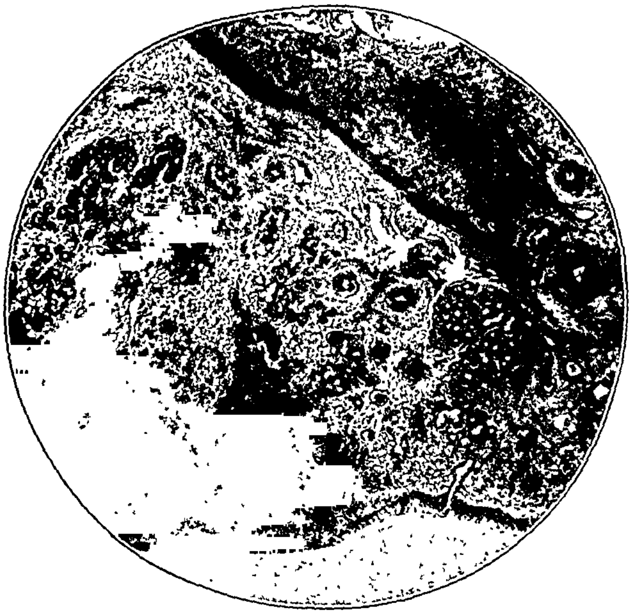

Fig. 9.—Chronic suppurative ethmoiditis. Marked fibrous tissue formation with obliteration of vessels and glands; apposition of new bone formation clearly marked around old bone.

Empyema of the ethmoid cells is characterized by a more or less profuse, constant, purulent secretion, often accompanied by crust formation.

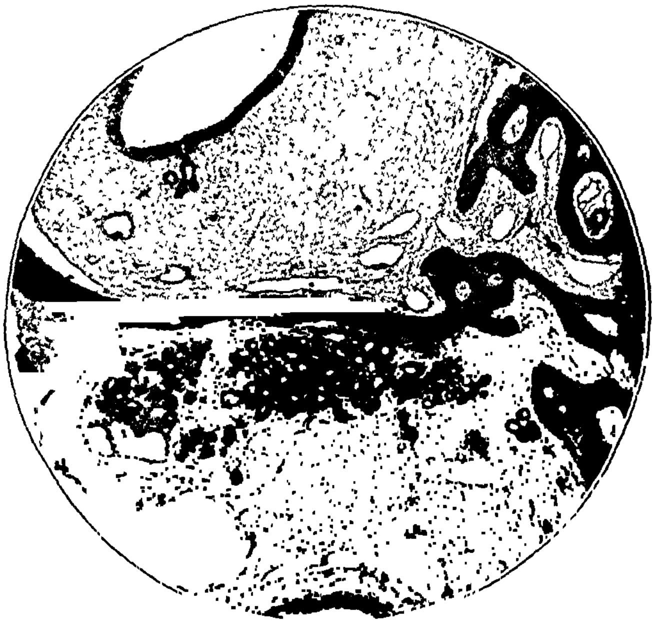

Fig. 8.—Chronic hyperplastic ethmoiditis. Polypoid formation in two separate and distinct cells; beginning atrophy of glands in one cell; blood vessels dilated but empty; medullary spaces and bone apparently normal.

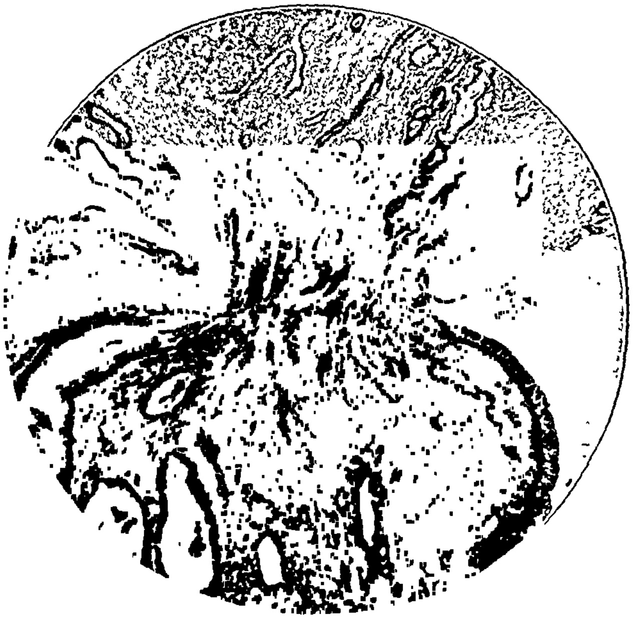

Fig. 10.—Chronic hyperplastic ethmoiditis with secondary empyema. Constriction of a polyp at its neck: below constriction round-cell infiltration and polypoid hypertrophy, glands dilated, blood-vessels obliterated; ciliated epithelium unchanged. Above constriction, fibrous tissue formation, glands atrophied; metamorphosis of ciliated epithelium into squamous

There is no question that many cases of chronic empyema occur without a vestige of polyp formation, and *vice versa*. One can go still further and state that typical empyema of the ethmoid labyrinth runs its course without polyp formation and that simple hyperplastic inflammation runs its course without the formation of purulent secretion. There then remains the combined process, polyp formation with empyema. According to

Uffenorde the formation of purulent secretion is the result of secondary infection and should be viewed as such, being accessory to the hyperplastic condition. The microscopic differences are not so clearly marked, although certain individual peculiarities may always be noted.

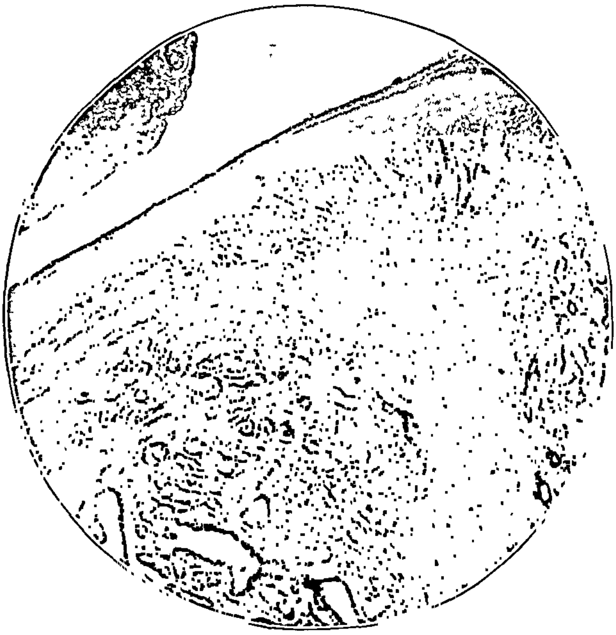

Fig. 11.—Chronic hyperplastic ethmoiditis with secondary empyema. Base of polyp, intense fibrous tissue formation; glands and vessels atrophied; peculiar new bone formation forming fingerlike projections from the old bone.

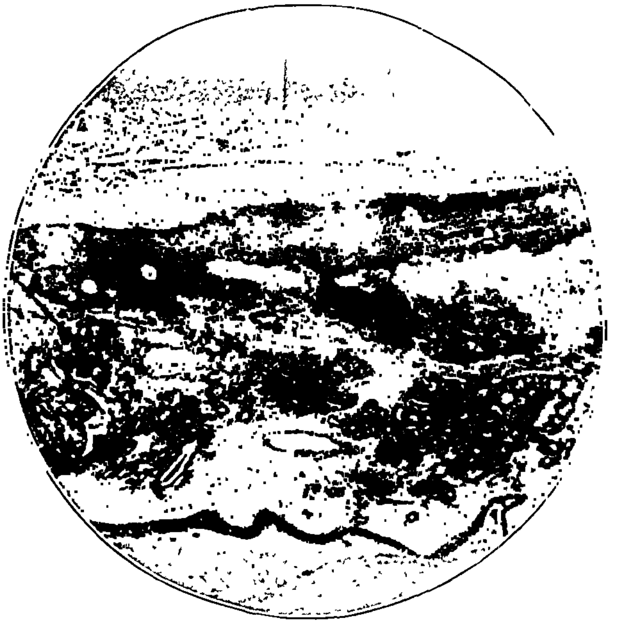

Fig. 12.—Chronic hyperplastic ethmoiditis. Advanced bone changes, marked osteoporosis or erosion of bone in conjunction with previously mentioned advanced changes in surrounding tissues.

These pictures are naturally not absolutely complete, as it requires a large number of microscopic fields to demonstrate every condition which is present in these affections. Combination processes have been omitted (with the exception of Nos. 10 and 11), as they would only tend to cause confusion among the few fields reproduced. The main purpose of this demonstration has been to prove that chronic hyperplastic ethmoiditis and chronic suppurative ethmoiditis are, at least primarily, two separate and distinct pathologic processes.

DIFFERENTIAL DIAGNOSIS

CHRONIC HYPERPLASTIC ETHMOIDITIS	CHRONIC PURULENT ETHMOIDITIS
Secretion clear and watery	Secretion purulent.
Inferior turbinate hypertrophied.	Inferior turbinate atrophied.
Never crust formation.	Always crust formation.
Headache most prominent symptom.	Headache often light or absent.
Ophthalmic manifestations due to pressure of hypertrophic mucous membrane on vessels.	Ophthalmic manifestations due to infection from purulent secretion.
Gastric disturbances absent	Gastric disturbances frequent.
Neurasthenic symptoms predominate	Neurasthenic symptoms not marked if flow of secretion be free.
HYPERPLASTIC TYPE	**SUPPURATIVE TYPE**
Metaplasia of ciliated epithelium into squamous only where parts have come into contact with other structures	General metaplasia where secretion comes into contact with mucosa
Meshes of subepithelial connective tissue dilated.	Subepithelial connective tissue shows fibrous formation.
Round cell infiltration scanty	Round-cell infiltration well marked.
Glands hypertrophied primarily.	Glands primarily atrophied.
Reabsorptive changes in bone predominate.	Apposition of bone predominates.

2032 Chestnut Street.

ABSTRACT OF DISCUSSION

Dr. W. E. Casselberry, Chicago: The research and deductions embodied in this excellent paper explain histologically familiar clinical observations, but do not account for certain of the variations in both types of ethmoiditis with which we are impressed in our operations. Non-suppurative or *hyperplastic ethmoiditis, which followed exactly the course* described by the essayist, I have watched develop and progress in the same patient at periods separated by an interval of ten years. At first there was hypertrophy of both middle and inferior turbinates, the only symptom at that time being nasal stenosis. At the second period, when he applied again for treatment, he was complaining of a sense of pressure far back between the eyes, of a watery nasal discharge, certain neurasthenic symptoms, and it was evident that the bridge of the nose had broadened, which is an important indication of ethmoidal disease. The inferior turbinates were still simply hypertrophied, but the middle turbinates were hypertrophied and polypoid. No real polyps were visible until the middle turbinate was removed, when a flattish polyp was exposed which had been hidden by the turbinate. Doubtless the disease was ethmoiditis from the beginning, but can the deduction be drawn that all cases of hypertrophic rhinitis are to be ascribed in origin to ethmoidal disease? I do not think so, but would value the essayist's full meaning in this respect.

A few years ago, before this Section, I presented a series of illustrations pertaining to atrophic ethmo-rhinitis, so named because I believed that many cases of atrophic rhinitis originated as a suppurative process in the ethmoid bone. Atrophy limited to the inferior turbinal, while the middle turbinal was considerably swollen, had a glistening aspect, and was filmed over by a viscid odorous secretion, represented the first degree. In the second degree, the atrophic process had caused some shrinkage of the enlarged middle turbinal, as shown by lessened breadth and a concave absorption of its under surface, which exposed to view the underlying bulla cell leading to a false bifid aspect. In the third degree, atrophy of the middle turbinals was complete, drainage from the ethmoid cells was thus promoted and Nature's belated amelioration manifest It is a suppurative ethmoiditis, but it differs from the ordinary focal suppuration of one or more cells or sinuses In atrophic ethmo rhinitis I have often curetted up into these cells but did not find one or two cells with a *focus of "laudable" pus but found there the same* character of secretion as in the middle turbinate region, a thick glairy, sticky, semi purulent secretion Evidently there is more than one type of suppurative ethmoiditis, I should like to hear Dr Skillern explain the histologic distinction

Dr George Paull Marquis, Chicago I want to emphasize what the essayist has brought out here as *to* a separate form of ethmoiditis, and I think he has shown, from a pathologic standpoint, what some of us have been observing from a clinical standpoint, that there is a form of ethmoiditis which exists without suppuration Those who claim that this is simply a manifestation of a chronic suppurative ethmoiditis and that there are periods of quiescence and then an exacerbation with suppuration, lose sight of the fact that in such a case during these periods of remission the symptoms absolutely vanish the patient is apparently well' In the hyperplastic form we may have an acute mixed infection giving a clinical picture of suppurative ethmoiditis but as soon as the mixed infection has subsided the symptoms of hyperplastic ethmoiditis continue with watery discharge from the nose, etc The headache accompanying this trouble is probably more severe than in any other form of sinus infection I want to relate a case, that of a clergyman who had had this headache for twenty two years He had had any number of examinations and was told that there was no involvement of the sinuses He had gone to a skillful surgeon and had the supraorbital nerve resected I diagnosed the condition as a hyperplastic ethmoiditis and on opening the ethmoid I removed probably a teaspoonful of granulation mass from this ethmoid that gave no indication in the nose except one which I am going to call to your attention Following that there has been no headache and that is a period now of about eight months This is a typical case in which there was no suppuration in the nose, no polypi, no indication whatever of ethmoidal disease so far as one could observe from our previous methods of diagnosis What then is the diagnostic sign? I would simply refer you to the remarks of Uffenorde, in which he lays stress on the soft, edematous condition of the mucous membrane on the outer wall of the middle turbinate Since studying some time with Uffenorde last year, I *have been on the lookout for these cases and have* been able to find a number I would lay stress on these signs severe headache, supraorbital in character, watery discharge, and so called weakness of the eyes There may be no sign of pus in the nose, no polypi, and not until we *open* the ethmoid do we find the seat of the trouble

Dr O T Freer, Chicago It is only of late that the term ethmoiditis has come into use in the literature, and in a manner which seems based on ill defined pathologic ideas Taken literally, it would mean a total inflammation of an ethmoid bone with its coverings In its present loose employment, however, the designation ethmoiditis is being applied to all chronic inflammations of the ethmoid region, from superficial chronic proliferative catarrhal inflammation limited to the mucous membrane over the middle turbinated bodies, to an inflammatory degeneration of the ethmoidal turbinated bones and the entire ethmoid labyrinth to the orbit In fact, everything which in earlier days was defined as nasal mucous polypi is now classed as ethmoiditis, with the wish to convey the idea that these outgrowths are now known to be merely symptomatic of an invariably grave degeneration of the ethmoid bone and its appendages, a condition demanding a radical extirpation of the ethmoidal cells This view, which I have repeatedly heard expressed, seems to be extreme, and one which has often led to an extensive removal of the ethmoidal turbinated bodies and cells when these structures were quite sound and the true condition merely a polypoid degeneration of the mucous *mem*brane of the middle turbinated body and unciform process I have often seen a complete cure in such cases after merely a thorough clearing away of the polypi that is, not merely with the snare, but with the punch forceps

I think ethmoiditis might be classified as follows 1. Superficial hyperplastic ethmoiditis This type is the most frequent Its main feature is polypoid hyperplasia of the mucous membrane over the middle turbinated body and in *the middle meatus, especially in the region of the hiatus* semilunaris While there may be some softening and degeneration of the middle turbinated bone, the bony structures of the ethmoid are not involved to an appreciable extent The condition may be accompanied by a purulent discharge from the surface of the polypi, but there is no suppuration from the ethmoidal cells

2 Deep seated hyperplastic ethmoiditis, non suppurative This condition involves the lateral mass of the ethmoid bone to a varying degree in extreme cases all of the ethmoidal cells being degenerated to the lamina papyracea of the orbit In operating on such ethmoid bones it is found that the entire middle turbinated body and the walls of the ethmoidal cells have become softened and partly absorbed by rarefying osteitis, so that the punch forceps penetrates with ease into the unresisting body of the ethmoid bone until its arrival on firm bone indicates the proper limit for the extirpation These are the cases in which the mere removal of polypi is useless and is promptly followed by a new crop, unless the diseased portion of the ethmoid bone furnishing it be cut out, if necessary, to the orbital wall

3 Deep seated suppurative ethmoiditis In this form numerous ethmoidal cells may be found filled with pus Otherwise, in my experience, the appearance is the same as in the non suppurative hyperplastic variety

I do not find that atrophy is a common accompaniment of ethmoidal suppuration On the contrary, I often find the hyperplastic type of the disease suppurative, as mentioned Atrophy of the ethmoid bone and its appendages does occur in the distinct affection called atrophic rhinitis, but atrophic rhinitis causes atrophy of the bony structures of the entire nasal interior as well and I have not found suppuration of the ethmoidal cells characteristic of atrophic rhinitis Ethmoiditis usually occurs in adults, while atrophic rhinitis is peculiar to adolescence, and is found especially in young girls I have found polypoid hyperplasia far more common in suppurative ethmoiditis than atrophy of the ethmoidal structures

Dr W L Ballenger, Chicago The point of the paper that impresses me is this The essayist divided ethmoiditis *into two types, the hyperplastic* and the suppurative Now then it seems to me he doesn't make it very clear why he so divides it As I understand hyperplastic rhinitis, or the polyp type of ethmoiditis, I should say it is due to an infection just as is the suppurative type, the active etiologic cause is infection Of course we have all degrees, from the very mild to the very severe infections, in one little or no purulent secretion, and in the other very pronounced secretion Now hyperplasia is surely due to a mild form of irritation or infection The suppurative type is due to a more virulent infection With a very mild infection the pathologic change is one of hyperplasia In the more active infection hyperplasia does not take place, but there is a sclerotic condition In the hyperplastic type we have a low grade of *inflammation*, and the tissue remains loose and is not compact, as in the more active type of inflammation In the lower grades, however, we may have and do have some purulent secretion, it may at times be purely mucus I have found that on first examination I may not find pus, but when I ask the patient if he has a yellow discharge from the nose it seems to me I have almost invariably found that he does, especially in the morning when he first gets up, so that I am rather of the opinion that even the hyperplastic type is attended by a mucopurulent secretion almost constantly, although it may not be observable in the nose on examination

Now both types of ethmoiditis are due to infection; in one instance a very low grade of inflammation and in the other *a more active type* With the lower grade we get hyperplasia and with the other we get a more active inflammation, with more secretion and with fibrous tissue formation.

Dr Ross Hall Skillern, Philadelphia: As to Dr. Ballenger's remarks, I might state that it was his skepticism that prompted me to present this paper I thought it might be a good thing to bring the slides out in this way for his inspection He seems to be at least half convinced, and I hope that time will further convince him

The latter part of the paper, which I did not have opportunity to read, answers Dr Casselberry's remarks in a brief way These pictures are not complete, as it requires a large number of fields to demonstrate thoroughly every condition The main purpose of the demonstration is to show that chronic hyperplastic ethmoiditis and chronic suppurative ethmoiditis are two separate and distinct pathologic processes.

Dr Ballenger asks *how the conclusion is reached* that these two conditions are primarily separate and distinct. He speaks about the infection caused by micro organisms; that I think is questionable. If one takes it that all diseased conditions are due to pathologic organisms he is right Recently I have had occasion to examine some of the so called bone cysts of the middle turbinate and found hyperplastic ethmoiditis just where the mucous membrane came in contact with the inspired air, the anterior *end* of the middle turbinate. *From* this fact it appears to me that this hyperplasia may be due to the irritation of the inspired air without regard to germs which *may* find lodgment on the mucous surface. The bacteriology of sinus disease is, I think, more or less obscure at the present time, *although* we have *had* numerous investigators, particularly *among* our German brethren. I have done *some* of this work in the past six months, and have in only one instance been able to obtain a pure culture of one particular organism; there were four or five different micro organisms, some pathologic and some the ordinary non-pathologic bacteria. I think the time will come when the so called non pus-producing organisms will be shown to be capable of causing inflammation. It seems to me it may be possible that the bacillus of influenza may produce the *inflammation* and then when it has disappeared other non-pathogenic organisms keep up the *suppuration*. *If* that theory can stand it will explain a great many things regarding suppurative ethmoiditis Taking *into* consideration the fact that there is only a difference in degree between polypoid swelling and polyp formation of the nasal mucous membrane, it is not strange that true polyp *formation* of the ethmoid may be observed without any empyema of the sinuses existing.

A Social Question.—Tuberculosis is no longer a medical problem; it is a great social question. Given public cooperation, in another generation it will pass away and be but a terrible memory—Martin Cooley, *Jour. Outdoor Life*, October.

TUBERCULOSIS OF THE ANKLE-JOINT AND TARSUS

JAMES WARREN SEVER, M.D.
Junior Assistant Surgeon, Children's Hospital
BOSTON

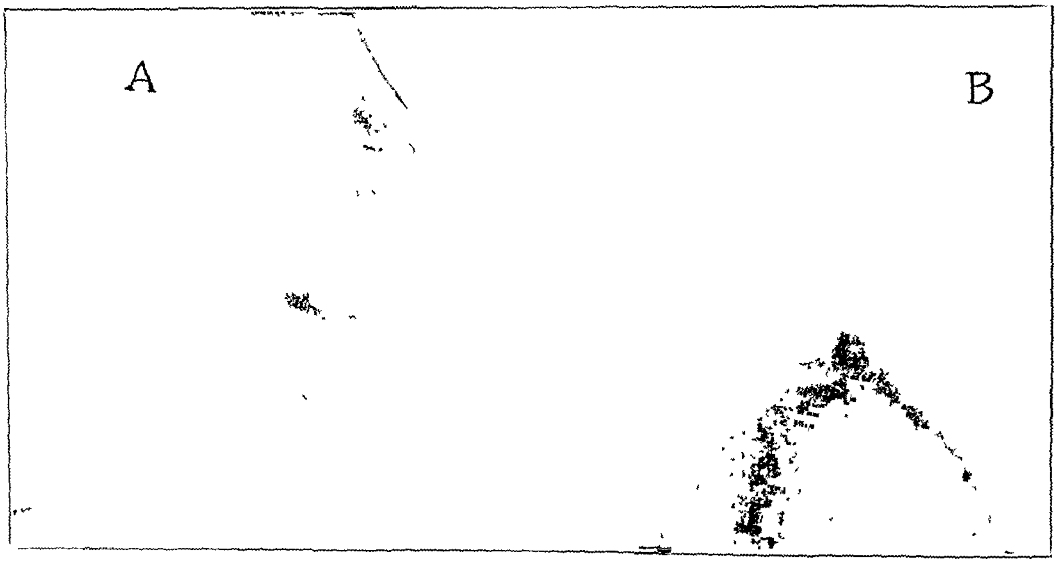

Fig 1—Ankle joint of A S, aged 1½ years. A lateral view of ankle, with destruction of upper portion of astragalus B antero posterior view of same foot The patient had an abscess opened in front of the external malleolus in November 1908. In May, 1910, there was slight bony thickening about the ankle, and considerable soft part thickening All motions were normal at the ankle joint. Patient toes in slightly; no valgus, no pain.

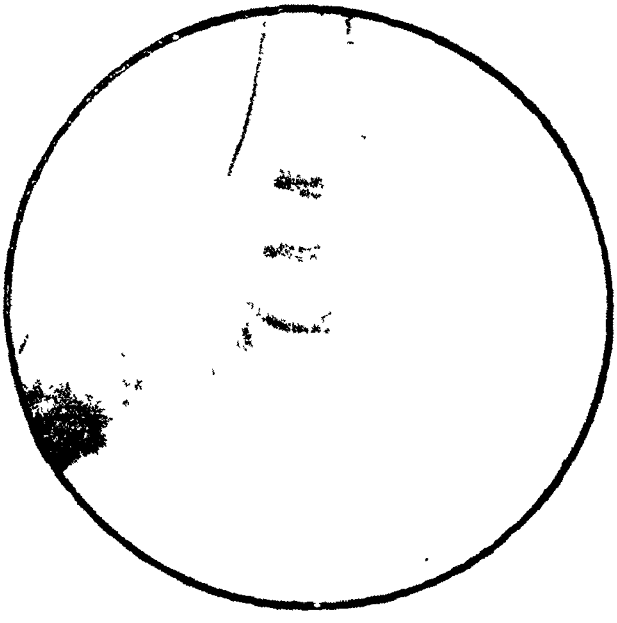

Fig 2—Ankle joint of W M, from x ray taken March, 1910 Tuberculous astragalus Excision of astragalus, March 31, 1908 Good motion at ankle Foot one inch shorter than right Slight pronation. No marked increase in lateral mobility

According to Thatcher in his "Modern Practice," published in 1826, "tuberculosis, scrofula, or 'the king's evil,'" is in its nature peculiarly inveterate, and is most generally handed down by parents to their offspring. Children possessing the most lively disposition and a maturity of understanding superior to others of their age, are those most liable to scrofula. It most commonly affects children of a lax habit, with smooth, fine skin, fair hair and rosy cheeks. It seldom makes its appearance before the second year of age, generally from the third to the seventh, and rarely makes its first attack after puberty."

In many ways this is to-day a correct picture of a case of bone or joint tuberculosis, varying somewhat, of course, in different cases.

Tuberculosis of the ankle-joint and the bones of the foot is much more frequent in children than in adults, and follows next in frequency tuberculous disease of the spine, hip or knee. Affecting bones and joints which have to bear weight, its treatment and course are necessarily much more difficult and protracted than in joints such as the elbow and shoulder. Also, owing to the superficial position of the bones of the foot, abscess formation is more noticeable and subsequent operation usually more often indicated.

Since 1868 there have been recorded at the Children's Hospital 213 cases of tuberculosis of the ankle-joint and bones of the foot. These cases have occurred in a clinic of 7,474 cases of bone and joint tuberculosis, showing a much larger proportion of cases than was shown in the occurrence of tuberculosis of the shoulder or elbow-joint. The cases of tuberculosis of the shoulder and elbow-joint have been reported by me in two recent papers.

Table 1 gives the data in regard to these cases, with the accompanying complications:

TABLE 1.—GENERAL STATISTICS OF 213 CASES OF ANKLE-JOINT TUBERCULOSIS

Total cases	213	Right ankle alone	108
Boys	122	Left ankle alone	90
Girls	91	Both ankles	15

Family history tuberculous	41
History of trauma	27
Average age at entrance	4.8 years

Average duration of disease at time of appearance at hospital, 9.3 months (197 cases).

Complications—

Ankle and hand (wrist and dactylitis)	15
Ankle and hip	6
Ankle and both knees	1
Ankle and knee	3
Ankle, knee and elbow	1
Ankle and elbow	1
Ankle and shoulder	1
Ankle and spine	9
Ankle and tuberculous peritonitis	1
Ankle with multiple tuberculosis with skin lesions and glands	11
	49

As will be seen, there were a few more boys affected than girls, probably owing to their greater exposure to trauma; a tuberculous family history was important; and about a fourth of the patients had other joints involved. Also it should be noted that a long time elapsed from the onset of the disease—that is, the time the parents first noticed that there was something wrong with the foot—until they brought the child to the hospital for treatment. This delay is often due to lack of responsibility on the part of the parents, and again to mistaken diagnosis on the part of the family physician, who believes the condition to be a chronic sprain or a rheumatic condition. It also points forcibly to the insidious and slow nature of the process. The average age in these cases, it will be noticed, was 4.8 years, as compared with the average age of patients with tuberculous shoulder of 4.7 years, and the average age of patients with tuberculous elbow of 5.3 years, which have been previously reported.

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Third metatarsal	4
Fourth metatarsal	2
Fifth metatarsal	4
	252
Occurring in more than 1 bone	40

When the astragalus is involved it is usually its upper surface, which leads to involvement of the whole joint, including the lower ends of the tibia and fibula. Areas in the os calcis are more usually localized, do not involve the joint, and are as a rule not as serious an affection, unless the disease is virulent and attacks other bones.

prompted me to present this paper. I thought it might be a good thing to bring the slides out in this way for his inspection. He seems to be at least half convinced, and I hope that time will further convince him.

The latter part of the paper, which I did not have opportunity to read, answers Dr. Casselberry's remarks in a brief way. These pictures are not complete, as it requires a large number of fields to demonstrate thoroughly every condition. The main purpose of the demonstration is to show that chronic hyperplastic ethmoiditis and chronic suppurative ethmoiditis are two separate and distinct pathologic processes.

Dr. Ballenger asks how the conclusion is reached that these two conditions are primarily separate and distinct. He speaks about the infection caused by micro-organisms; that I think is questionable. If one takes it that all diseased conditions are due to pathologic organisms he is right. Recently I have had occasion to examine some of the so-called bone-cysts of the middle turbinate and found hyperplastic ethmoiditis just where the mucous membrane came in contact with the inspired air, the anterior end of the middle turbinate. From this fact it appears to me that this hyperplasia may be due to the irritation of the inspired air without regard to germs which may find lodgment on the mucous surface. The bacteriology of sinus disease is, I think, more or less obscure at the present time, although we have had numerous investigators, particularly among our German brethren. I have done some of this work in the past six months, and have in only one instance been able to obtain a pure culture of one particular organism; there were four or five different micro-organisms, some pathologic and some the ordinary non-pathologic bacteria. I think the time will come when the so-called non-pus-producing organisms will be shown to be capable of causing inflammation. It seems to me it may be possible that the bacillus of influenza may produce the inflammation and then when it has disappeared other non-pathogenic organisms keep up the suppuration. If that theory can stand it will explain a great many things regarding suppurative ethmoiditis. Taking into consideration the fact that there is only a difference in degree between polypoid swelling and polyp formation of the nasal mucous membrane, it is not strange that true polyp formation of the ethmoid may be observed without any empyema of the sinuses existing.

A Social Question.—Tuberculosis is no longer a medical problem; it is a great social question. Given public cooperation, in another generation it will pass away and be but a terrible memory—Martin Cooley, *Jour. Outdoor Life*, October.

TUBERCULOSIS OF THE ANKLE-JOINT AND TARSUS

JAMES WARREN SEVER, M.D.
Junior Assistant Surgeon, Children's Hospital
BOSTON

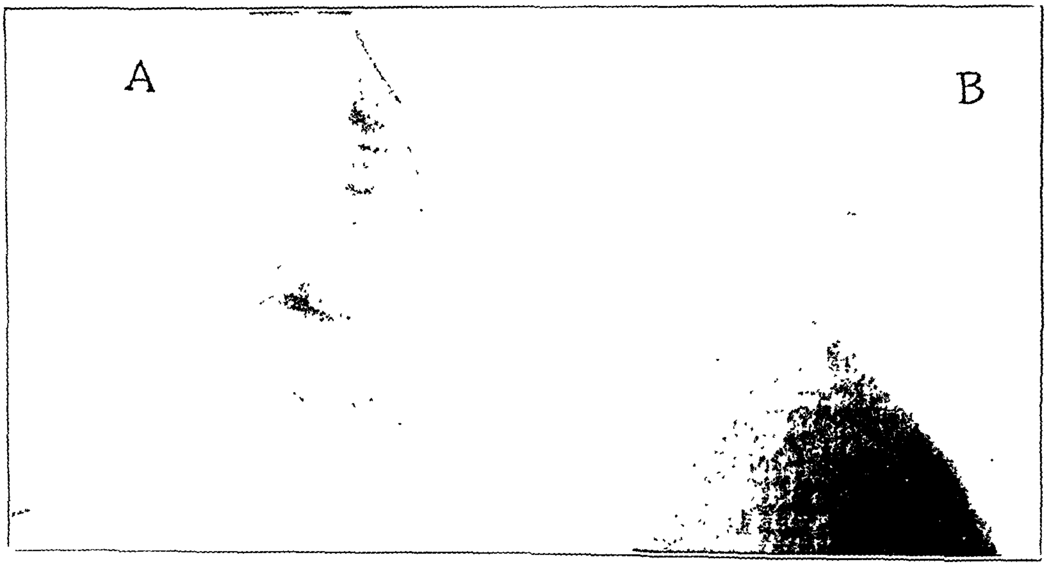

Fig 1.—Ankle-joint of A. S., aged 1½ years. A, lateral view of ankle, with destruction of upper portion of astragalus. B, anterio-posterior view of same foot The patient had an abscess opened in front of the external malleolus in November, 1908. In May, 1910, there was slight bony thickening about the ankle, and considerable soft part thickening All motions were normal at the ankle-joint. Patient toes in slightly; no valgus, no pain.

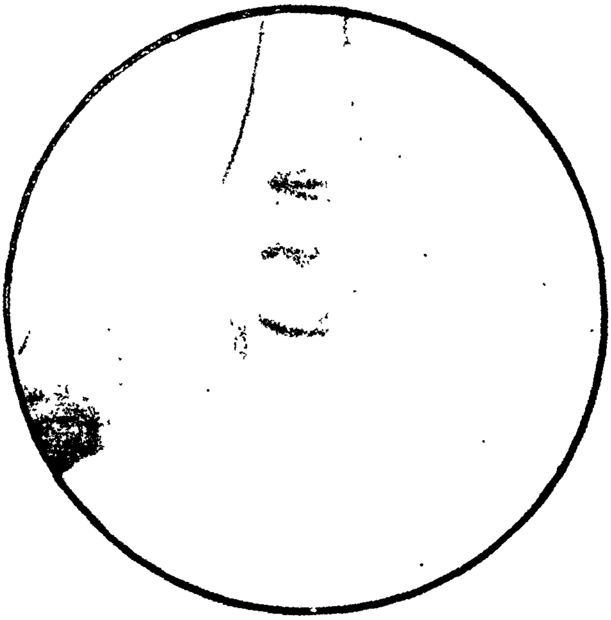

Fig. 2.—Ankle-joint of W. M., from *x*-ray taken March, 1910. Tuberculous astragalus. Excision of astragalus, March 31, 1908. Good motion at ankle. Foot one inch shorter than right. Slight pronation. *No* marked increase in lateral mobility.

According to Thatcher in his "Modern Practice," published in 1826, "tuberculosis, scrofula, or 'the king's evil,'" is in its nature peculiarly inveterate, and is most generally handed down by parents to their offspring. Children possessing the most lively disposition and a maturity of *understanding* superior to others of their age, are those most liable to scrofula. It most commonly affects children of a lax habit, with smooth, fine skin, fair hair and rosy cheeks. It seldom makes its appearance before the second year of age, generally from the third to the seventh, and rarely makes its first attack after puberty."

In many ways this is to-day a correct picture of a case of bone or joint tuberculosis, varying somewhat, of course, in different cases.

Tuberculosis of the ankle-joint and the bones of the foot is much more frequent in children than in adults, and follows next in frequency tuberculous disease of the spine, hip or knee. Affecting bones and joints which have to bear weight, its treatment and course are necessarily much more difficult and protracted than in joints such as the elbow and shoulder. Also, owing to the superficial position of the bones of the foot, abscess formation is more noticeable and subsequent operation usually more often indicated.

Since 1868 there have been recorded at the Children's Hospital 213 cases of tuberculosis of the ankle-joint and bones of the foot. These cases have occurred in a clinic of 7,474 cases of bone and joint tuberculosis, showing a much larger proportion of cases than was shown in the occurrence of tuberculosis of the shoulder or elbow-joint. The cases of tuberculosis of the shoulder and elbow-joint have been reported by me in two recent papers.

Table 1 gives the data in regard to these cases, with the accompanying complications:

TABLE 1.—GENERAL STATISTICS OF 213 CASES OF ANKLE-JOINT TUBERCULOSIS

Total cases	213	Right ankle alone	108
Boys	122	Left ankle alone	90
Girls	91	Both ankles	15

Family history tuberculous	41
History of trauma	27
Average age at entrance	4.8 years

Average duration of disease at time of appearance at Hospital, 9.3 months (197 cases).

Complications—

Ankle and hand (wrist and dactylitis)	15
Ankle and hip	6
Ankle and both knees	1
Ankle and knee	3
Ankle, knee and elbow	1
Ankle and elbow	1
Ankle and shoulder	1
Ankle and spine	9
Ankle and tuberculous peritonitis	1
Ankle with multiple tuberculosis with skin lesions and glands	11
	49

As will be seen, there were a few more boys affected than girls, probably owing to their greater exposure to trauma; a tuberculous family history was important; and about a fourth of the patients had other joints involved. Also it should be noted that a long time elapsed from the onset of the disease—that is, the time the parents first noticed that there was something wrong with the foot—until they brought the child to the hospital for treatment. This delay is often due to lack of responsibility on the part of the parents, and again to mistaken diagnosis on the part of the family physician, who believes the condition to be a chronic sprain or a rheumatic condition. It also points forcibly to the insidious and slow nature of the process. The average age in these cases, it will be noticed, was 4.8 years, as compared with the average age of patients with tuberculous shoulder of 4.7 years, and the average age of patients with tuberculous elbow of 5.3 years, which have been previously reported.

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When the astragalus is involved it is usually its upper surface, which leads to involvement of the whole joint, including the lower ends of the tibia and fibula. Areas in the os calcis are more usually localized, do not involve the joint, and are as a rule not as serious an affection, unless the disease is virulent and attacks other bones.

Either the lower end of the tibia or fibula, near or at the epiphyseal line, may be the starting point of the disease, which then usually spreads to the whole ankle-joint. Swelling localized about the internal malleolus usually points to a focus in the tibia, and swelling about the external malleolus to a focus in the epiphysis of the lower end of the fibula. Swelling which obliterates both malleoli usually means that the astragalus is involved, or at least the synovia covering it, as well as the lower ends of the tibia and fibula.

Marked swelling over the neck of the astragalus, and most prominent on the dorsum of the foot, usually points to an active process in that region, which later will probably extend and involve the ankle-joint. (See Fig. 1.)

Foci of disease originating in the other tarsal and metatarsal bones of the foot are not frequent, and may often be limited to the bone in which they originate, or, if the virulence of the infection is great, may rapidly spread to the other bones and so involve the whole foot. In children the tarsal and metatarsal bones are largely cartilaginous, and so have slight resisting power and disintegrate rapidly, especially provided no treatment is undertaken from the start.

Abscesses occur frequently, and this is probably explained by the superficial position and small size of the bones involved, which conditions cause an abscess to form and break before the healing process of reabsorption has a chance to take place, as would happen in bones and joints of larger size in which the focus of disease is more deeply situated.

Following the opening of an abscess, a sinus usually persists. Spontaneous rupture of an abscess is not rare, and many cases of this series presented themselves at the hospital following such a rupture, and with a discharging sinus. In these cases a mixed infection is the usual condition to be combated, and adds to the risk of any curetting operation.

Sinuses persisting after operation are not rare, but their presence depends a good deal on the extent of the operative proceedings and the number and area of bones involved. A clean excision of a single bone with a single sinus, even if long-existent, which removes practically all the disease, should lead one to expect a first-intention wound, without subsequent breaking down, provided the after-treatment is carefully and properly carried out. In this series of cases there were forty patients in whom the disease had attacked more than one bone of the foot.

DIAGNOSIS

The diagnosis of tuberculous disease of the ankle-joint or tarsus is usually easily made. The cardinal symptoms are pain, soreness, limp, swelling, muscle spasm. When the ankle-joint is involved, and when the disease has existed for any length of time, the foot is usually held in slight plantar flexion, with obliteration of the outlines of the malleoli, and occasional inversion of the foot. Increased surface temperature is practically always present and redness when the disease is in one of the smaller superficial bones, or when an abscess has formed.

Chronic sprain, irritable flat-foot, syphilis and infectious arthritis are to be ruled out by the history, x-rays and results of treatment. It is usually not difficult for one familiar with these conditions to make a correct diagnosis. Osteomyelitis may be confused with an active tuberculous process, but presents the picture of a much more rapid and virulent infection, which requires immediate operative interference. Disease in the tarsal bones may be localized to one bone, and may be evident on inspection. Also it may have spread and involved the whole tarsus so that the whole dorsum of the foot is swollen, boggy and hot.

Disease of the lower end of the tibia, fibula or astragalus quickly involves the ankle-joint and causes the characteristic swelling about the malleoli, the outlines of which are obliterated.

PATHOLOGY

The pathology of tuberculosis of the bones of the foot is like that of all other bone tuberculosis. Ely states, in defining tuberculosis of the joints, that it is a reaction of the tissues in and about a joint to the presence of the tubercle bacillus or its toxins. He believes strongly in primary infection of the synovia, followed by extension from the synovia to the cartilage and bone. Nichols, on the other hand, believes that all joint tuberculosis is of primary bony origin, starting at the epiphyseal lines in the bone marrow and invading the joint secondarily.

The bacillus usually enters the respiratory tract, or may be in the intestinal tract, when it is usually derived from infected milk. The tonsils are also to be considered as channels of infection. At autopsy the foci are usually found in the lungs, intestines, bronchial and mesenteric lymph-nodes. General tuberculosis may result from a local bone infection, provided the process is active and virulent and the patient's resistance is below par. It may also follow after a curetting operation on the focus, or in a case which has had multiple sinus of long standing.

Following a mild injury there is an inflammatory exudate which offers the tubercle bacilli a favorable field for growth if it is already present in the body; while if the injury is severe the reparative processes are so active that the bacillus is destroyed even if it does obtain access to the injured part.

When the bones of the foot are affected there is the usual formation of the tubercle, which breaks down and becomes caseous, owing probably to the lack of blood-vessels in the destructive process, and also to the action of the soluble toxins produced by the tubercle bacillus.

As I have noted before, these caseous masses, being in bones which are small and superficial, readily appear under the skin, as abscesses. They may remain single or spread and coalesce, and cause extensive destruction of various adjacent bones of the foot.

Repair is brought about by formation of fibrous tissue which replaces or partly encapsulates the tuberculous tissue. This may become ossified, and so may result in bony anchylosis of the part involved.

In detail the histogenesis of the tuberculous process is as follows, as shown by Kertesz through experiments on rabbits:

> Tubercle bacilli introduced into the bone-marrow of rabbits are quickly surrounded by polymorphous leukocytes, and they, as well as a portion of the fixed connective tissue cells situated in the district invaded, are destroyed within two or three days. Another portion of the fixed connective tissue cells, as well as the desquamated endothelial cells of the capillaries, increase amitotically. These cells, as well as the young proliferated elements, group themselves about the tubercle bacilli and form the epithelioidal tubercle, which is completely formed as early as the fourth day. The first tuberculous giant cells appear on the fifth day, originating at this stage through a confluence of the augmented endothelium of the capillaries.
>
> On the seventh day lymphocytes group themselves about the tubercle, which latter at this time already shows signs of caseation in its center. On the eighth day the lymphocytes

penetrate the tubercle. The leukocytes do not reach the neighborhood of the bacilli in their initial accumulation from the blood-vessels, but rather from the septa of the neighboring bone marrow. The lumina of the capillaries in the neighborhood of the tuberculous tissue are obliterated either through pressure, or they disappear through the desquamation of the endothelium, which then begins to proliferate. The accumulation about, and the migration into the tubercle on the seventh or eighth day, takes place also from the neighboring bone marrow. The connective tissue elements of this tissue proliferate. It is probable that this increase in connective tissue produces the obliteration in the blood spaces. Redestruction of the tubercle, its coagulation necrosis, is caused therefore, not considering the toxins of the bacilli, by the obliteration of the capillaries and the blood-spaces in its neighborhood.

TREATMENT

The treatment in this series of cases has been operative and non-operative.

Before taking up the results in these two classes of *cases I wish to give the outlines of the routine treat*ment. Given a case of tuberculosis of the ankle or tarsus, the two most essential things to do are to prevent weight-bearing and to enforce absolute rest. These two conditions are the *sine qua non* in the treatment of any tuberculous joint condition, and without them very little is to be expected either for a cure or for a good satisfactory result.

The general condition is most important also, and a healthy, restful, outdoor life, with plenty of nourishing food, is essential.

With disease in the bones and joints considerable variation occurs in the virulence of the infection and the resistance of the individual, and where in one case acute and destructive disease exists, causing great impairment of function, in another the disease may run a very mild course and leave the patient with nearly a normal joint. There is no way of telling at first, however, which type exists, and so the routine is to be carried out in each case. The use of tuberculin in this series of cases of surgical tuberculosis has not been tried. In view of the experience of others, however, it would seem that it is of use in certain cases, and certainly shortens the convalescent period.

Bier's passive congestion method has also proved to be of use, in the hands of others, who state that the course of the disease is shortened, and that a better functional result is obtained.

In order to get relief from weight-bearing and to insure rest of the part, a plaster cast is applied, with the foot at a right angle to the leg, from the toes to the knee. The child is then fitted to a Thomas knee splint, on which he may walk. He is also provided with a high sole and crutches. This is the routine outfit, and is all that has been used in this series of cases, for protection and fixation of the joint.

As in all tuberculous bone disease in children, the great question arises: Is conservative treatment—that is, absolute rest and fixation—better than operative interference—that is, curettage of the focus, or excision of the whole affected bone or bones?

The only way that this question can be answered is by a study of a large number of cases and statistics, with final results. By presenting figures which cover these points I shall endeavor to show that there is a distinct advantage in children, at least, by pursuing a conservative plan, both as to the result as far as function is concerned, and also in time saved.

Table 3 shows the list of operations performed in this series of cases.

TABLE 3.—LIST OF OPERATIONS FOR TUBERCULOUS ANKLE-JOINT

Incision and curettage	46
Astragalectomy	45
Removal of scaphoid	5
Removal of os calcis	15
Removal of cuboid	6
Removal of lower end of fibula	14
Removal of lower end of tibia	11
Internal cuneiform excised	2
Middle cuneiform excised	2
External cuneiform excised	2
First metatarsal excised	2
Second metatarsal excised	0
Third metatarsal excised	1
	156

Taking the ankle-joint first, the records show that it was involved by operation seventy times, including the astragalus and lower ends of the tibia and fibula. This total covers operations for purposes of bone excision, of one or more bones, or parts of bones. This leaves a total of only forty for the other cases of bone excisions, not involving the ankle-joint. The opening and curetting *of abscesses in this series amounted to a total of forty-*six cases. These operations on abscesses were not done until absolutely necessary, and were done simply for drainage purposes. I have not attempted to classify them, as the resultant data would be of no great significance.

In the operative cases, where nearly twice as many operations were done which involved the ankle-joint, the known results are as follows:

TABLE 4.—RESULTS OF OPERATION

Motion—	
Good	29
Slight	22
None	47
	98
Deformity—	
None	7
Thickening about malleoli	65
Inversion of foot	2
Equinovalgus	10
Shortening of foot	17
Equinovarus	5
Calcaneus	2
	101

These results include forty-five excisions of the astragalus, fourteen operations for the removal of the lower end of the fibula and eleven operations for the removal of the lower end of the tibia.

In the operative cases the average duration of the disease from its onset until treatment was discontinued was 19.8 months (in 114 cases). The average duration of the treatment was 10.1 months. Of the operative cases there were 72 in which there was 1 operation; 17 in which there were 2 operations; 16 in which there were 16 operations; 8 in which there were 4 operations; 1 in which there were 5 operations.

The necessity of operating on a patient more than once depends wholly on the virulence of the disease, the rapidity of its extension, and the extent of the operation done. A number of cases which have only an abscess opened at one time may need later operations for other abscesses, enlarging a sinus, or the later removal of a sequestrum or an entire bone.

In this operative list is also included the few operations which were done on the bones of the foot which did not involve the ankle-joint.

The non-operative results appear in Table 5.

These are the results in those cases which were treated by fixation, rest and protection only until the process had healed. The average duration of the disease in these cases from onset until cessation of the treatment was 16.1 months in 99 cases. The *average duration of* the treatment was 6.8 months, giving an average in favor of the non-operative series of 3.3 months from the beginning of the treatment until it was no longer necessary.

TABLE 5.—RESULTS IN NON-OPERATIVE CASES

Motion—	
Good	32
Slight	23
None	33
	88
Deformity—	
None	4
Plantar flexion	1
Thickening	63
Equinovalgus	11
Calcaneovarus	2
Calcaneovalgus	1
Equinovarus	6
	88

From a study of these figures it will be noted that there was a distinct gain in time and also in the function and lack of deformity of the foot in the cases of the non-operative series. It is only natural to expect less deformity in a child's foot in which conservative measures have been followed than after the mutilation of an excision more or less extensive. The time saved is also of importance.

Scudder's conclusions in the series of eighteen cases reported in 1889, which are included in this report, cannot be admitted in view of these later figures. Radical operations on joints and bones in children are not the best methods of treatment, and conservative measures are to be carried out until radical operation is indicated, when all else has failed to stop the progress of the disease.

TABLE 6.—DEATHS IN CASES OF ANKLE-JOINT TUBERCULOSIS

Years of Age.	Time of Death from First Appearance of Disease.	No. of Operations.	Last Operation Before Death.	Condition of Ankle at Death.	Cause of Death.
3	1 year	2	Few months	Not healed	T. B. meningitis.
4	5 months	2	2 days	Not healed	Shock.[1]
2¼	1 year	2	10 days	Not healed	T. B. meningitis.[2]
3	1½ to 2 years.	1	1 year	Healed	T. B. meningitis.
12	2½ years	1	2 years	Healed	T. B. meningitis.
1½	Few months	1	Few months.	Not healed	T. B. meningitis.
4	11 months	0	No operation	Healed, swollen	T. B. meningitis.
2	16 months	0	No operation	Not healed	T. B. meningitis.[3]
3	20 months	1	4 months	Not healed	Gen. T. B.[4]
1	4 years	2	4 years	Healed	Gen. T. B.[5]
9	2 years	3	6 weeks	Not healed	Gen. T. B.[6]

1. First operation astragalus. Part of os calcis, scaphoid and head of ulnar removed. Second operation os calcis curetted.
2. Astragalus and cuboid removed.
3. Eight to ten sinuses about ankle. No operation. Both ankles.
4. Astragalus and scaphoid curetted. Amyloid.
5 Developed lumbar tuberculosis three years later with abscesses, which were opened one and two years before death. Amyloid.
6. T. B. lungs, liver, appendix, mesenteric glands.

Operations, then, should be clean. No curetting should be allowed, and any bone or bones involved should be removed *in toto,* with as little mutilation as possible. The increased risk of deformity after an excising operation is, of course, obvious, whereas the non-operative cases which go on to a cure are much less apt to result in deformity, and then not of so serious a nature.

When small foci exist in bones such as the os calcis, the cuboid, the scaphoid and the cuneiform, which are not very active, a conservative course is to be followed. If the process is active and acute, often an incision to establish drainage will prevent extensions, and give the part an opportunity to heal, but removal of the whole bone is not to be practiced unless the destruction is great, the process spreading, or of long duration with a persistent sinus, for the subsequent deformity is of course greater. In some instances subperiosteal excision may be done, which allows the cavity to become filled with new bone in a shorter time than it would otherwise. In other cases the sinus may be probed out, the sequestrum removed, and the bone cavity carefully wiped out with phenol, followed by alcohol, or tincture of iodin may be used. Occasionally a first-intention wound is obtained after this procedure.

DEFORMITIES

Following a cure in either an operative or non-operative case there may be deformity which needs correction. This is to be done by appropriate tenotomies or osteotomies, a sufficiently long time having elapsed to avoid any further lighting up of the original disease. The foot is then to be held in the correct weight bearing position. In looking at Tables 4 and 5 one may see the deformities following the two classes of operative and non-operative cases as far as I have been able to collect reports of them. It is to be noted that the most common result was thickening about the malleoli. This thickening is practically always bony in character, and is due to the deposit of new bone laid down in the healing process.

There is usually also some shortening of the foot from atrophy of disuse, which is generally slight, and also from removal of bone. The shortening is usually most marked when the astragalus has been removed. The other deformities noted are due in part to excisions of various bones and contractions of the soft parts, and rarely follow any rule.

The motion noted is to be interpreted as follows: "Good" means normal to one-half normal; "slight" means 10 degrees to 20 degrees normal. In cases in which certain joints are ankylosed, neighboring joints take up their work and increase their range of motion, so that there is always a certain amount of compensation. For instance, if the ankle-joint is ankylosed, the tarsometatarsal joints will increase their range of motion to such an extent that there is considerable freedom in that joint, which condition of course makes for more ease and freedom in walking and a more flexible foot.

CAUSES OF DEATH

Including Dr. Scudder's six cases reported in 1889, in this series I have been able to find but a total of eleven deaths. Nine of this series were operative cases, the deaths occurring from either tuberculous meningitis, shock or a generalized tuberculosis, at varying intervals after the operation. Some could be attributed directly to the operation as a cause, but others were too remote to lead one to suspect that operation was a factor. These cases are shown in detail in Table 6.

CONCLUSIONS

Tuberculosis of the ankle-joint and bones of the foot in children is insidious in its onset, chronic in its course, and attacks usually young children.

The expectant or conservative method of treatment is preferable to the operative one.

Time is saved and deformity less under the conservative plan than by the operative method.

There is also less danger of secondary joint involvement and general tuberculosis by pursuing the nonoperative plan.

The disease may be associated with bone and joint tuberculosis in other parts of the body.

The prognosis is fairly good for life, but poor for a good ankle-joint in which there is no disability.

A certain number get a good functional ankle, with but slight deformity.

In regard to the smaller metatarsal bones the results are good for joint motion.

234 Marlboro Street.

VARIOUS FORMS OF EXPERIMENTAL DIABETES AND THEIR SIGNIFICANCE FOR DIABETES MELLITUS*

J. J. R. MACLEOD, M.B., Ch.B., D.P.H.
CLEVELAND

In the short time allotted in this symposium to the study of experimental diabetes or glycosuria, I shall not of course attempt to give any general review of all the experimental conditions which may cause reducing substances to appear in the urine. It will be more profitable to devote the greater part of my time to a study of the simplest and best-known form of experimental glycosuria, namely, to that which results from stimulation of certain portions of the nervous system.

I shall, then, briefly consider the relationship to this comparatively simple form of glycosuria of some of the other experimental forms, such as those produced by asphyxia and by the influence of certain ductless glands. Its relationship to clinical diabetes I shall, however, omit, for the reason that there is very little definite information on which to base conclusions.

Before going farther, it may be well to call attention to the distinction that must be drawn between the terms "glycosuria" and "diabetes." The former denotes the presence of glucose or dextrose in the urine and is merely a symptom. The latter is the name applied to a group of symptoms of which glycosuria is one; it is the name of a disease. It is with the chemical pathology of the symptom, glycosuria, that we are to occupy our time.

So far as is known at present, there seem to be three distinctly different mechanisms by which dextrose may appear in the urine. In two of these the appearance of dextrose in the urine, the glycosuria, that is to say, is dependent on an increased percentage of dextrose in the blood. This hyperglycemia, as it is called, may be due either to increased production of dextrose by the liver or to diminished utilization of dextrose in the tissues. In the remaining form of experimental diabetes there is no hyperglycemia, the glycosuria being primarily due to a derangement of the renal function of such a nature as to cause the sugar normally present in the blood to be excreted into the urine.

It is, then, to the first of these three forms of experimental glycosuria that I shall devote most of my attention.

When we sift it down to its essentials we see that a study of this form of experimental diabetes means really a study of those conditions which so disturb the glycogenic function of the liver as to bring about an excessive conversion of its glycogen into dextrose. It may well be asked here of what value to the general question of diabetes such investigations can be. The great attention which has recently been given to the study of such forms of experimental diabetes as that which follows pancreatectomy, parathyroidectomy, epinephrin injection, phloridzin poisoning, etc., has drawn attention away from this simpler type defined above, and this, notwithstanding the well-known fact that at the outset of every form of diabetes there exists an excessive hepatic glycogenolysis. It is not far from the truth to state that in every variety of experimental diabetes there is an excessive production of sugar due to hepatic glycogenolysis; in some of them the glycosuria ceases when all the glycogen has disappeared; in others it persists, the dextrose being now derived from other sources than glycogen and being usually accompanied by a depressed glycolysis. Besides glycosuria other symptoms of diabetes make their appearance. In this latter group of cases the independence of the source of the sugar from the glycogenic function of the liver in the later stages has diverted attention from this function with the result that in seeking for the exact cause of the persistent production of dextrose by the organism, it is often lost sight of that the glycogenic function of the liver has been almost, if not entirely, thrown out of commission, as evidenced by the great poverty of glycogen, even after feeding with excess of dextrose-yielding food.[1] Loss of the power on the part of the tissue to destroy dextrose is usually given as the cause of the hyperglycemia, but the possibility that this is associated with a derangement of hepatic function is commonly overlooked. Hyperglycogenolysis is the first outcome of this derangement; may it not be that the subsequent inability to destroy dextrose in the organism, as well as the production of dextrose from protein, is also dependent on deranged hepatic function?

These preliminary remarks indicate the importance of a more thorough knowledge of the glycogenic function of the liver, and it is to what is already known of this and of the conditions which (apart from lesions elsewhere in the organism) may throw it out of gear that we shall now confine our attention.

SOURCE OF GLYCOGEN

In the short space of time at my disposal, there are of course several aspects of this glycogenic function which must be very cursorily considered and one of these is *the source of the glycogen*. There is now no doubt that besides the carbohydrates themselves, proteins may lead to glycogen deposition. The most satisfactory evidence on which this conclusion is based has been derived from metabolism studies in diabetic animals, it having been found in these that when proteins or certain of the degradation products of protein are ingested, an increase in the dextrose excretion occurs. The proteins are thus shown to be convertible in the organism into dextrose which, of course, means that, were the glycogenic function of the liver not deranged, they would have been converted into glycogen.[2, 3, 4]

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*Read in the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

[1] von Norden: Handbuch der Pathologie des Stoffwechsels, Berlin, 1907, ii, 17.

[2] Lüthje: Arch. f. d. ges. Physiol., 1904, cvi, 160.

[3] Pflüger: Das Glykogen. Bonn, 1906.

[4] Lusk: Am. Jour. Physiol., 1908, xxii, 174.

What more particularly concerns us in the present connection is the fate of this glycogen. Following Bernard's teaching,[5] most authorities believe that glycogen is reconverted into dextrose, and delivered as such into the blood whenever that which is already present therein tends to fall below its normal percentage. When the tissues require more carbohydrate in the performance of their metabolic functions, they derive it from the blood which again replenishes its store from the glycogen of the liver; or, if this be all used up, from that also present in the muscles.

No one denies that before being utilized, the glycogen is reconverted into dextrose, but the English physician Pavy[6] has advanced the hypothesis that whenever the glycogen molecule becomes broken down into molecules of glucose, the latter, instead of becoming dissolved in the blood plasma, becomes instantly taken on as a "side-chain by a protein constituent of the blood." He was one of the first to demonstrate the existence of carbohydrate molecules among the degradation products of protein, and, disregarding the fact that it is mainly as glycosamin that these are present,[7] he concludes that they must represent the glucose, which in this form is being transported to the tissues to be utilized as fuel.

Pavy's chief argument against the reconversion of hepatic glycogen into free dextrose seems to be that dextrose could not exist in a free state in the blood on account of its being immediately excreted in the urine. "When circulating through the kidney," so he writes, "it [dextrose] cannot be prevented from escaping like other small molecular bodies and making its appearance in the urine." I have no time at my disposal to discuss this question at any length, and, indeed, it requires little discussion, for it has been unequivocally demonstrated by the recent work of Rona and Michaelis[8] that all the sugar in the blood exists therein in simple solution, some of it in the corpuscular contents, the remainder in the plasma. These workers have shown that when diluted blood is shaken with certain colloids, such as ferric hydroxid or kaolin, the proteins are all adsorbed (*i. e.*, form a colloidal combination) and can be quantitatively precipitated by the subsequent addition of a trace of electrolyte, but that not a trace of sugar is removed from solution by this treatment. Were the dextrose in any way united with the proteins, it would certainly be carried down along with them. Nor is it possible that there can be a disruption of any such compound by the above treatment, for the reagent employed cannot be imagined to have any disruptive action. Another piece of evidence in support of the free state of dextrose in blood is furnished by the observation that, whereas charcoal adsorbs both sugar and protein from a solution containing these two substances alone (*i. e.*, when it is shaken with a solution of protein and sugar), yet it adsorbs the protein but not the dextrose when acetone is present in the solution. The acetone being more adsorbable than the dextrose prevents the latter being taken up by the charcoal.[9] Further evidence of the free state of dextrose in the blood was furnished by dialysis experiments to discuss which, however, would occupy too much of our time.[10]

Under normal conditions this production of dextrose by the liver is finely adjusted so that the percentage in the blood is kept about the normal level, which is variously given as from 0.1 to 0.15 per cent. What is it, then, that regulates this amount? It cannot be because of a direct influence on the liver cell of the amount of dextrose in the blood, for, with the exception of that circulating in the hepatic artery, this passes to the liver through the portal system, in which it has added to it the dextrose absorbed by the intestine. Only two other possibilities remain open: direct action on the liver cells of some chemical constituents of the blood other than dextrose, or a nervous reflex.

Experimental evidence at present stands in favor of the latter view. The conversion of glycogen into dextrose or glycogenolysis, as we may call it, which is thus held in control during life, becomes very much exaggerated after death. In a few moments after the circulation of blood through the liver has ceased this glycogenolysis sets in and becomes more and more marked until, after about thirty-five to forty-five minutes, in the case of most livers, it has assumed enormous proportions, after which it gradually declines to disappear almost entirely some considerable time before all of the glycogen has been thus transformed.[11]

During life, an equally active glycogenolysis may be brought about by a variety of causes, but more especially by stimulation of certain portions of the nervous system. This causes an excess of dextrose to accumulate in the blood, hyperglycemia becomes established and as a consequence glycosuria. This is experimental glycosuria or diabetes.

There is nothing to indicate that any essential difference exists between ante-mortem and post-mortem glycogenolysis; in other words, there is a constant tendency for the liver to produce sugar from glycogen. During life this tendency is held in check by some inhibitory mechanism, the break-down or the removal of which is therefore the immediate cause of experimental diabetes. In the further development of the subject, it is from this view-point that I shall proceed, and the first question naturally concerns the cause of the conversion of glycogen into dextrose.

THE CAUSE OF THE GLYCOGENOLYSIS

It has been known for long that the liver tissue contains a diastatic or glycogenolytic ferment. This ferment, which we may call glycogenase,[12] is contained in fairly active form in extracts of blood-free liver, the most satisfactory extract in this regard being that prepared by the well-known Buchner process. It is precipitable in an active state by alcohol, although prolonged contact with this reagent seems to cause a deterioration in its strength. It is extremely difficult to make accurate quantitative estimations of the amount of glycogenase in liver or any other tissue, but, in so far as such estimations have been made, there is no indication that it is any larger in amount sometime after death when post-mortem glycogenolysis is very active, than it is in a liver immediately after death. In the same way, no increase in the amount of glycogenase in the liver seems to occur as a result of those conditions which in the intact animal cause glycosuria.

This statement does not at first sight appear to be in accord with the results recorded by Bang, Lungdahl and

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[5] Bernard: Leçons sur le Diabète, 1877, p. 371.

[6] Pavy: Carbohydrate Metabolism and Diabetes, London, 1906.

[7] Macleod: The Metabolism of the Carbohydrates; in Recent Advances in Physiology and Biochemistry, London, 1906, p. 315.

[8] Michaelis and Rona: Untersuchungen über den Blutzucker, Biochem. Ztschr., vii, 329; viii, 356; xiv, 476; xvi, 60; xviii, 375.

[9] Michaelis and Rona: Biochem. Ztschr., xiv, 489.

[10] Michaelis and Rona: Biochem. Ztschr., xiv, 476

[11] Macleod and Pearce: Unpublished experiments.

[12] Macleod and Pearce: Am. Jour. Physiol., 1910, v, 255.

Bohm[13] to the effect that in incubated samples of minced (blood-free) liver of the rabbit there is more rapid glycogenolysis in a given time when, prior to death, there exists some experimental condition causing glycosuria. It is evident, however, that Bang's results instead of indicating an actual increase of glycogenase might be explained as due to influences affecting the inhibitory mechanism. Evidently, then, the production of dextrose by the liver, either ante-mortem or post-mortem is due, not to variable amounts of glycogenase, but to variations in the activity of the inhibitory mechanism which holds it in control.

Glycogenase is by no means confined to the liver tissue; it is present, in at least as great amount, in blood and to a variable degree, apart from the blood which they contain, in the kidneys, muscles, intestines, spleen, etc. The fact that as much, if not more, of it is present in blood as in the liver, as well as the other facts regarding its distribution, indicates that there is no relationship between the amounts of glycogen and of glycogenase in the animal body. Here again, is evidence that it is not the presence or absence of the ferment which determines whether glycogenolysis shall occur, but rather some controlling or inhibitory agency.

The same facts regarding the distribution of glycogenase would further suggest the existence of some definite site for its production. Since of all extracts those of the pancreas exhibit by many times the strongest glycogenolytic activity, it has naturally been thought that this gland is the source of the ferment. Should this be the case, there are two paths by which the glycogenase might gain the general circulation—the blood and the lymph. In the former case, we should expect to find glycogenase present in greater concentration in the blood of the pancreatic veins than in blood from the carotid artery. Such, however, is not the case, for both during ordinary anesthesia and when the nervous system is being stimulated in such a way as to produce hyperglycogenolysis, the amounts of glycogenase in the systemic blood and in that of the pancreatic veins are identical. It is therefore impossible to demonstrate any actual secretion of this ferment by the pancreas into the blood probably because of the great volume of blood. It may be, however, that the remarkable strength of the pancreatic extract is on account of the diastase which would otherwise have been contained in the pancreatic juice

The large amount of glycogenase in blood as compared with other tissues explains why the glycogen disappears with greater rapidity from the liver after death when the organ is left intact and full of blood than when, just immediately after death, the blood is washed out of it. The much more rapid glycogenolysis which occurs in a mixture of liver and blood-free liver tissue has naturally suggested the possibility that there might be something in the blood exercising an activating influence on the hepatic ferment. No evidence of such an activation can, however, be obtained, the greater glycogenolysis in the mixture of blood and liver being merely an additive function of the ferments present in each.

Regarding the nature of the mechanism by which glycogenolysis is inhibited or held in abeyance during life, we are almost entirely in the dark. In considering this question it has, however, to be borne in mind that the glycogenolysis produced by glycogenase takes place within the hepatic cell; it is an intracellular reaction and consequently is regulated by the vitality of the cell. In other words, the intracellular glycogenase is prevented from acting on the glycogen during life by forces which are dependent on the vitality of the protoplasm. On the death of the cell, therefore, glycogenolysis sets in. This function of the protoplasm is under control of the nervous system as is illustrated in the various forms of experimental glycosuria about to be described. It is of interest to note that section of all the hepatic nerves does not in itself cause any change in the amount of dextrose in the blood.[14]

MECHANISM OF GLYCOGENOLYSIS

We are now in a position to consider a little more fully the various conditions which may bring about glycogenolysis in the liver during life. These, as already mentioned, are the conditions which cause experimental glycosuria. Besides stimulation of certain portions of the nervous system and asphyxia, there are many drugs which have this effect, but since the exact mechanism by which most of these act has not yet been fully worked out, it would profit us but little in the present connection to consider them and we will rather confine our attention to the so-called nervous and asphyxial glycosurias.

The reflex arc through which the nervous control of the glycogenic function is effected has its center located in the fourth ventricle. Mechanical stimulation in this location in rabbits, as by puncturing, is soon followed by the appearance of a large amount of dextrose in the urine, dependent on great increase in the reducing substance in the blood. The glycosuria disappears when all the glycogen in the liver has been used up and it fails to appear when, prior to the puncture, the liver has been rendered glycogen-free by starvation or in some other way.[5, 15] The efferent path from this center to the liver is by way of the cervical portion of the spinal cord and the great splanchnic nerves.[7] The actual existence of these fibers in this portion of the cord has, however, never been demonstrated, for electrical stimulation here so interferes with the respiratory movements as to create a condition of partial asphyxia which in itself leads to hyperglycemia, and when this asphyxia is prevented by delivering a constant stream of pure oxygen into the bronchi, then stimulation of the cord does not cause an increase in the reducing power of the blood.[7, 14] It is possible that the great fall in blood-pressure or the spinal shock may be responsible for this negative result. In the great splanchnic nerves, on the contrary, it is a very easy matter to demonstrate the presence of the fibers;[16] indeed, in my experience, there is no more certain way of bringing about a rise in the reducing power of the blood than by stimulation of these nerves. The nerve fibers involved must of course descend by the cervical portion of the spinal cord, and they leave the cord by the spinal roots in the lower dorsal region.[17]

There must also be afferent influences carried to this glycogenic center and it is believed that these are most plentiful in the vagus nerve, but here again the experimental evidence is faulty on account of the fact that electrical stimulation of these nerves affects the respiratory movements and thereby tends to an asphyxial condition. Indeed, I have so far been unable to cause any increase in the reducing power of the blood by stimulation of the vagus nerves, when, by delivering pure oxygen into the bronchi, I have excluded the possibility of asphyxia.

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[13] Bang, Lungdahl and Bohm: Beitr. z. chem. Phys. u. Path., 1907, ix, 408; 1907, x, 1 and 312.

[14] Macleod: Am. Jour. Physiol., 1907, xix, 388.

[15] Macleod and Dolley: Proc. Physiol. Soc.; Jour. Physiol., 1906, xxxii, 42.

[16] Macleod: Am. Jour. Physiol., 1908, p. 373.

[17] Morat and Dufront: Jour. de physiol. norm. et path., 1894, Series 5, vi, 370; also Macleod (Notes 7, 14, 16 and 19).

Splanchnic glycosuria is, I consider, an experimental condition worthy thorough investigation, for in this particular instance, in contrast to practically every other form of experimental glycosuria, we have a simple uncomplicated problem; that is, we are studying the effect on a definite function of a gland produced by stimulation of its nerve. Although, as already explained, the excessive production of dextrose by the liver is not to be considered as the immediate cause of diabetes, yet in every variety of this condition it is the cause of the hyperglycemia in the early stages, and even in the later stages the glycogenic function on which it depends can be shown to be abnormal.

NERVOUS CONTROL OF GLYCOGENIC FUNCTION

In connection with this comparatively simple condition of splanchnic glycogenolysis there are several questions concerning the nervous control of the glycogenic function which are susceptible of tolerably exact investigation. The most important of these concerns the exact nature of the nervous control. Three possibilities exist:

1. The nerve may control the production of the glycogenolytic ferment just as the secretory nerve fibers in the chordi tympani control the secretion of the submaxillary gland.
2. The nerve fibers may have no direct influence on the amount of glycogenolytic ferment, but may exercise a control on those conditions which retard or inhibit its activity.
3. The vasoconstriction produced in the liver by stimulation of the nerve may lead to an asphyxial or anemic condition of the hepatic cells which then permits glycogenolysis to proceed.

In considering these hypotheses it is convenient, first of all, to see whether there is any evidence in favor of the last one. I have attempted to furnish this evidence by making comparison of the rate of glycogenolysis in the liver deprived of its blood-supply (by connecting the portal vein with the vena cava and in some cases also ligating the hepatic artery) with and without stimulation of the splanchnic nerves. In such a case a greater glycogenolysis could not be attributed to changes in blood-supply, and would therefore indicate direct action on the liver cell. Although my first few results in this direction showed a distinctly greater glycogenolysis when the nerve was stimulated, I have been led, by more extended studies on post-mortem glycogenolysis, to conclude that the marked irregularities in the time of onset and in the velocity of this process make it dangerous to depend on such differences as we found for a solution of the problem. It must be remembered that deprivation of its blood-supply in any case brings on a glycogenolysis in the liver which is probably as intense as it can be under *any* circumstances, so that it is scarcely to be expected that an increase in this, due to stimulation of the splanchnic nerve, could make itself felt.[11]

If it be the case that it is merely by its influence over the blood-vessels of the liver that the nervous system controls the glycogenic function, then surely changes in blood-supply produced in other ways should be expected to have a similar effect. The most important experiment in this connection is clamping of the portal vein. If this be done for short periods of time—two minutes or less—there is no evidence that sugar increases in amount in the blood of the general circulation; *i. e.*, no hyperglycemia becomes established, although the first blood issuing from the liver after the clamp is removed must of course have contained an excess of sugar. If the portal circulation be blocked for longer than about two minutes, however, then when it is reestablished, it continues to deliver an excess of dextrose into the systemic circulation so that a general hyperglycemia soon becomes established. Portal stasis for more than about two minutes evidently brings on hyperglycogenolysis which lasts at least long enough to cause hyperglycemia. Nor is it possible with certainty to perfuse the liver outside the body with defibrinated blood containing a normal percentage of sugar, without a rapid glycogenolysis occurring. I have repeatedly attempted this with the observance of every possible precaution against any cessation of the circulation (*i. e.*, starting the artificial circulation through a branch of the portal before the ante-mortem circulation has ceased, etc.), but in only one or two cases have I been able to render glycogenolysis any less active than it would have been in a dead liver. Evidently, then, the glycogenic function of the liver is affected by considerable changes in its portal blood-supply.

Less profound changes in the blood-supply, however, are without effect. Thus clamping of the hepatic artery and vasoconstriction in the splanchnic area produced by stimulation of the splanchnic nerves, after sectioning the hepatic branches so that there could be no direct action on the liver, do not cause hyperglycemia.[7]

I believe that it is highly improbable that the changes in blood-supply produced by stimulation of the splanchnic are of sufficient magnitude to excite glycogenolysis.

By exclusion, therefore, one is driven to conclude that the nervous influence must be either on the production of ferment or on the inhibiting mechanism.

Sufficient work has not as yet been done on this phase of the question to warrant any final decision as to which of these two modes of action is actually involved. But everything so far points to the latter as the more probable. Thus we have been unable to find that saline extracts of blood-free liver after stimulation of the splanchnic nerve are any stronger in glycogenase than those from resting liver. The histologic changes observed by Cavazzani in the liver cells before and after stimulation of the celiac plexus may be interpreted in terms of either hypothesis.[18]

EXPERIMENTAL DIABETES BY ASPHYXIA

A very common form of experimental diabetes is that produced by asphyxia. Clamping of the trachea and injection of curare are the means usually employed to bring about this condition. Many hypotheses have been offered of the mechanism thereby involved: that it is due to diminished oxidation of dextrose in the tissues, that it is due to asphyxial stimulation of the glycogenic center, and that it is due to the direct action of venous blood on the liver. The first of these is certainly untenable, for no hyperglycemia follows asphyxia when the liver is removed from the circulation by establishing the Eck fistula.[19] The hyperglycemia is unquestionably due to increased production of dextrose from the liver. The second hypothesis, *i. e.*, that there is asphyxial stimulation of the nerve-centers, is upheld by the observation that after sectioning all the hepatic branches of the celiac plexus hyperglycemia is no longer produced by clamping of the trachea.[17] Hyperglycemia, however, does occur after such isolation of the liver from the nervous system when the asphyxia is produced by injection of curare, indicating, therefore, that profound venosity of the blood may, besides acting on the nerve centers, also act directly on the hepatic cells.[20] This direct action of venous blood in stimulating glycogenolysis might be due either to the increased carbon dioxid content of such blood or to its deficiency in oxygen. By incubation experiments with mixtures of minced liver and blood we have shown that when the glycogenolysis occurring in two hours is compared in atmospheres of oxygen, carbon dioxid and hydrogen the greatest action occurs in an atmosphere of carbon dioxid, there being, however, no difference between that occurring in oxygen and hydrogen. The increased content of carbon dioxid in intensely venous blood may therefore stimulate hepatic glycogenolysis independently of the nervous system, but in ordinary conditions of asphyxia the glycogenolysis is a nervous one.

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[18] Cavazzani, F.: Arch. f. d. ges. Physiol., 1894, lvii, 181.
[19] MacLeod: Am. Jour. of Physiol., 1909, xxii, 278.

It is well known that a slight degree of acidity favors the action of all diastatic ferments; the increase in carbonic acid in the blood acts in this regard as any other feeble acid would. This result led me to study the effect on the percentage of reducing substance in the blood of the systemic circulation of injection of small amounts of lactic acid into the blood of the portal vein. I did not, however, obtain any evidence of hyperglycemia, but I do not consider that the experiments are at all conclusive, for it is only with very slight degrees of acidity that diastatic action is accelerated; it is depressed by larger amounts. The amounts of acid injected, though in some cases quite small, were yet probably beyond the optimum.

It has been pointed out that the hyperglycemia following several experimental procedures is in many cases the result of a more or less marked asphyxia coincidentally produced. When oxygen is freely delivered into the alveoli, many of these experimental conditions no longer cause hyperglycemia. We have already referred to this matter in connection with the so-called reflex forms of nervous diabetes, and in that which follows stimulation of the spinal cord. Observations of the same nature have been made by Underhill in the glycosuria-producing effect of certain drugs such as nicotin, morphin, pyridin, anesthetics, etc.[21] It is probable that the free administration of oxygen prevents glycosuria in the cases by its accelerating the oxidation of lactic acid, etc. The free perflation of the pulmonary alveoli also removes carbon dioxid from the blood.

INTERNAL SECRETIONS

As a final group of experimental conditions which produce glycosuria, must be mentioned the secretions of certain ductless glands. Besides the pancreas, whose influence in this connection will be discussed separately in the symposium, we have to consider very briefly the adrenal and the thyroid. Injection of epinephrin, especially when it is made subcutaneously, is followed by glycosuria after a latent period which varies considerably in different animals. When the injections are made intravenously, very little glycosuria is produced. Repeated injection ultimately leads to disappearance of the glycosuria although the hyperglycemia persists. This immunity is probably due to diminished permeability of the kidney to sugar.[22] When the epinephrin injections are given to rabbits that have been starved or treated with strychnin so as to render the liver poor in glycogen, the glycosuria still occurs, and, curiously enough, more glycogen comes to be laid down in the liver.[23] Administration of epinephrin to starved dogs which are fully under the effect of phlorhizin does not cause any increase in the elimination of sugar.[24]

It is sometimes stated that the epinephrin causes glycosuria because it has an inhibitory action on the glycolytic or sugar-destroying influence of the internal secretion of the pancreas; it is supposed to hinder this to such a degree that dextrose accumulates in the blood.[25] There is, however, no experimental evidence in support of this hypothesis. It is more reasonable to explain the epinephrin action as being on the nerve control of the glycogenic function of the liver.[23] It is known that epinephrin owes many of its other physiologic activities to its stimulating effect on the sympathetic autonomic nervous system. It seems rational to conclude, therefore, that hyperglycogenolysis which it induces when given to well-fed animals and the evident derangement of hepatic functions which, as above noted, follows its administration to starved animals, is due to the same cause. In this connection, it is important to note that it is only when the dose of epinephrin is sufficient to cause a rise in blood-pressure that it produces glycosuria.[27]

The parathyroid and probably also the thyroid glands stand in some relationship to carbohydrate metabolism; thus excision of three of the four parathyroids in dogs greatly lowers the tolerance of the animal for sugar and complete thyreoparathyroidectomy, besides causing tetany, etc., causes also glycosuria.[28] Some observers believe that the thyroid glands have an opposite influence to that of the parathyroids in their effect on carbohydrate metabolism.[29] These influences of the thyroid and parathyroid glands have been noted in clinical practice. In hyperthyroidism (exophthalmic goiter) if glycosuria is not present it is readily induced by feeding with sugars; in hypothyroidism (myxedema) glycosuria is practically never observed even when large amounts of sugar are taken.

In explaining these influences of the thyroid and parathyroid on carbohydrate metabolism, it is customary to assume that it can be only on the glycolytic or sugar-destroying action of the pancreas.[29, 30] Indeed, this influence of the pancreas is frequently assumed to be the only function which can be abnormal in diabetes, but there is no justification for this belief, and until there is why should we bemuddle the situation by assuming that the other ductless glands retard or increase its action?

CONCLUSION

I would conclude by again urging that in the utilization of carbohydrates in the animal body the glycogenic function of the liver is at least as important as the glycolytic action in the tissues, and since there is plenty of evidence that this glycogenic function is easily deranged so as to cause diabetes, it should be more carefully investigated as to its participation in the cause of those forms of diabetes which at first sight may seem to be quite independent of it

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[20] Macleod: Proc. Soc. Exper. Biol. and Med., 1909, vi, 95.

[21] Underhill, F. P.: Jour. Biol. Chem., 1905-6, i, 113.

[22] Pollak, L.: Arch. f. exper. Path. u. Pharmakol., 1909, lxi, 157.

[23] Pollak, L.: Arch. f. exper. Path. u. Pharmakol., 1909, lxi, 166.

[24] Ringer, A. I.: The Influence of Adrenalin in Phlorhizin Diabetes, Jour Exper. Med., 1910, xii, 105.

[25] Eppinger, Falta and Rudinger: Arch. f. klin. Med., 1908, lxvi, 1.

[26] Underhill, F. P. and Closson: Am. Jour. Physiol., 1907, xvii, 42.

[27] Ritzmann: Arch. f. exper. Path. u. Pharmakol., 1909, lxi, 231.

[28] Underhill and Hilditch: Am. Jour. Physiol., 1909, xxv, 66,

[29] Eppinger, Falta and Rudinger: Ztschr. f. klin. Med., 1909, lxvii, 380.

[30] Grey and Santelle: Jour. Exper. Med., 1909, xi, 659. Ling: Jour. Exper. Med., 1909, xi, 665. McCurdy: Jour. Exper. Med., xi, 798.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS LUSK,* MACLEOD, PRATT, WOODYATT AND WALLACE, CONSTITUTING A SYMPOSIUM ON DIABETES

Dr George C Smith, Boston I think we must consider that a functional glycosuria is distinct from the organic glycosuria that we have been discussing to day These organic glycosurias are incurable In other words, the people who contract that form of diabetes due to pancreatic disease under the age of 20 die, no matter what we do for them, dietetically or with drugs The form of diabetes that occurs after symptoms of organic disease of the intestines is entirely different, also the form of diabetes that occurs in combination with obesity, which most of us have treated, coming on at the age of 40 to 60 years These are functional The more we increase the power of the patients to digest carbohydrates, the more quickly they get well They come to us with a history of disturbed digestion for a long time, and not only because of sugar in the urine Reduce the patient's fat by diet, and the sugar immediately disappears Consequently, we should treat the patients because of their inability to digest carbohydrates When their weight becomes normal, do not stop there but continue the reduction till you reach the point at which they can digest carbohydrates, then you will no longer find sugar in the urine I feel therefore, that the most important thing to day is to treat the class of glycosurias that we can cure It is, of course, very important to find the cause of the special form of diabetes before us

Dr J A Lichty, Pittsburg I am glad that Dr Lusk has taken the position which he has with reference to fat metabolism In some of these cases the fats are our main article of food, which allows us to keep up the proper caloric value of the diet, and if we should find that fats in themselves are converted into sugar it would make our care of these cases all the more discouraging I can refer to these papers only clinically, and shall therefore, discuss Dr Wallace's paper particularly I wish to add one or two points with reference to increasing the carbohydrate tolerance In the early part of my clinical experience with these cases, I directed most of my diabetic patients as ambulatory, that is, I allowed them to go about their business and take their usual physical exercise Within the last few years I have found by restricting the physical and mental exertion I could increase the carbohydrate tolerance I have had the patients rest in bed and in the open air very much as we at present treat tuberculous patients In severe cases in which the diet did not seem to free the urine from sugar such a course of treatment frequently accomplished the desired result

Dr Wallace mentioned in his paper that the less food the patient can get along with and maintain his weight, the better it is for him I find this experience very valuable in these rest cure cases Because of the limited exertion the patients need less food A few years ago I reviewed my cases of diabetes a hundred or more, with reference to the relation of gall bladder trouble and glycosuria In some 250 of gall bladder and duct diseases I found only two cases of glycosuria One would expect to find more, since we know the relation of pancreatic disturbance to glycosuria I have also in recent years taken up the Cammidge reaction in the urine in these cases and I have been rather gratified to be able to distinguish a certain class of cases in which the Cammidge reaction is usually found They are patients of rather mature age They are rather emaciated and their weight can not be easily increased, the amount of sugar in the urine is small, and they find very little inconvenience from their condition In the young, thin patients I have never found the Cammidge reaction I have also had experience with several very interesting cases of diabetes associated with pulmonary tuberculosis. They were usually patients beyond the middle time of life, and belong to the fat, old type In several I ignored the diabetic condition and fed them as I would a patient with pulmonary tuberculosis They all promptly lost weight and developed a rather serious condition As soon as I placed them on a carbohydrate free diet, even though the caloric value was lower than my former diet, they increased in weight and their condition improved satisfactorily

Dr J P Matthews, Carlinville, Ill In my work, I have made a special study of gout and rheumatism In looking over the literature of these, I found that the idea is that gout and rheumatism are due to a faulty metabolism of the nitrogenous products of our diet In the oxidation of these nitrogenous products, there is a formation of uric acid and of urea If urea is not formed by a process of burning up or oxidation, we have these end products that are a direct cause of gout Now why could not this reasoning be applied to the subject of diabetes? Why could we not say that there is a suboxidation of the carbohydrates, causing acetonuria, or, as I think the technical term is, the formation of a leukomain or of a poisonous product due to the suboxidation of the carbohydrates? Why cannot a reasoning be applied to diabetes analogous to that which we have applied to gout?

Dr Graham Lusk, New York I do not wish to have Dr. Woodyatt's excellent paper go without discussion In my laboratory, Dr Ringer and I have lately seen that glycocoll, when ingested in phlorhizin glycosuria is converted into sugar, perhaps through glycollic acid, and afterwards glycolaldehyd. We have also found that glyceric acid can be converted into sugar Possibly glycolaldehyd and glycericaldehyd as given by Dr Woodyatt were converted into sugar If this sugar had been oxidized it might have reduced the quantity of oxybutyric acid in the urine These experiments might be properly controlled by comparing the action of glycolaldehyd with that of a similar quantity of dextrose itself to see their relative influence on the diabetic condition One substance may be named in this connection that might be of possible benefit, and that is pyroracemic acid The diabetic may convert lactic acid into dextrose and this is therefore useless The corresponding ketone pyroracemic acid might possibly be a substance that could be directly burned by the cells in the place of dextrose If we can by scientific research make such a substitution we shall arrive at a cure for diabetes

Dr J J R MacLeod, Cleveland, O I should like to sum up the position with regard to the study of diabetes I believe that it is wisest to use the most conservative treatment I think that the conclusions drawn from the recent work done in experimental diabetes have rested on two faulty assumptions One is that the conversion of glycogen into sugar by the liver is a function variable in amount, and the other is that a large number of the recently discovered instances of this form of diabetes are due to deficient glycolysis What I should like to bring up is the fact that for neither of these two contentions is there much evidence The contention that there is a substance in the liver which is susceptible of being secreted in varying amount, there is not a particle of evidence to support This substance, which we call glycogenase, occurs in rather small amount in the liver In the case of the dog, there are large quantities of this substance in the blood, and probably relatively not more than 25 per cent as much in the liver This being the case, it seems to me that the assumption of the existence of variable amounts is probably faulty and misleading

Dr R T Woodyatt, Chicago In response to Dr Lusk's remarks concerning the possibility of getting some antiketogenic substance that will be incapable of being converted into glucose, it seems to me barely possible that such a substance may never be found, for the reason that the conversion of one chemical compound into another is coming more and more to be interpreted as dependent on preliminary chemical dissociation If lactic acid can go over into sugar it means that prior to the formation of the sugar the lactic acid must have been in an intermediate, active or dissociated state, susceptible either of transformations, union with other similar molecules or of oxidation Since the same state is necessary for oxidation as for condensation, it is possible that to let a substance be dissociated may insure its condensation as well as its oxidation. Therefore, I can conceive that to pursue the search for an antiketogenic substance that will oxidize and not be built up into sugar may be futile. As to the question whether glycerin aldehyd was turned into glucose before oxidizing, I cannot say definitely that it was not, but in the same patient to whom we gave it, larger percentages of sugar were obtained in the urine when glucose itself was given than when glycerin aldehyd was administered. The condition of the patient varied, however, from time to time, in spite of all precautions. The possibility suggested by Dr. Lusk is there, and it would be dogmatic to say that it could not occur. The second chart, in which the glycerin aldehyd was given under conditions that hypothetically favored its condensation into glucose, shows an almost quantitative excretion of the triose as glucose—which is evidence (partly hypothetical, to be sure, but significant) that when glycerin aldehyd did go over into glucose, it then fell out of the body as such.

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* See pages 2105 and following

DEHYDRATION BY DIETETIC MEASURES

AN INTERPRETATION OF THE KARELL, OERTEL AND WIDAL TREATMENT OF CIRCULATORY AND RENAL DISEASES

A. MAGNUS-LEVY, M.D.
BERLIN

The German word, *Schonungstherapie,* being untranslatable, I have adopted as the nearest English equivalent for it the expression "protective therapy" or "sparing therapy." This means to allow an organ to rest and to strengthen it by temporarily making as little claim on its functions as possible. In contrast to *Schonungstherapie* or "protective therapy" is *Uebungstherapie*, a treatment by which an organ is stimulated to work. These are the ideas and terms first employed by the German physician Albin Hoffmann. What they mean will be readily appreciated when the different forms of therapeutics employed in the treatment of the diseases of the heart are considered. Confining an arteriosclerotic patient to his bed is *Schonungstherapie*—protective treatment. If on the other hand walking and climbing are prescribed for him, which of course must be definitely limited, that would be employing the *Uebungstherapie*—treatment by exercise. Hoffmann has most wisely discussed the problems of general therapeutics from these two standpoints: the treatment which protects and spares an organ, and the treatment by which an organ is stimulated to work or perform its functions. Indeed these two ideas are applicable to the therapeutics of the impaired functions of all organs.

The dietetic treatment of circulatory disorders is essentially one form of protective therapy. The names of three authors demand especial attention in this connection; those of Karell, Oertel and Widal. The best and most widely employed methods of treatment are associated with their names, and these also indicate distinct epochs in the development of therapeutics. There are wide differences in the practical standpoints and underlying theoretical considerations adopted by these authors. The essential feature of the Karell treatment is the exclusive use of milk in relatively small quantities at definitely stated intervals. The idea underlying Oertel's method is a great reduction in the quantity of fluid ingested. The Widal treatment on the other hand, consists in excluding sodium chlorid as much as possible from the food, which in other respects is the ordinary mixed diet

Karell was purely an empiricist; he described his procedure as a milk treatment, *la cure de lait,* and stipulated that its rigid enforcement required six weeks. He began in the first week by giving small quantities of milk, from 60 to 200 c.c., four times a day at intervals of four hours. He then increased these quantities in the course of the second and third week, and finally allowed at the end of the fourth week the addition of small quantities of foods intended to stimulate the appetite, such as salt herring and salt bread, but without any other concessions. Only after the lapse of five to six weeks did he allow the patient daily a single real meal, besides which, three times a day, milk in various forms was to be taken. Karell considered that the chief field for his method lay in the treatment of all sorts of circulatory and renal disorders, especially when combined with edema. But he obtained good results in other conditions as well; for example, in the most varied diseases of the gastro-intestinal tract, in neuralgias, and in functional nervous affections. Karell was an excellent practitioner and paid but little attention to theories. He even deprecated any such attitude on his own part and simply said he believed that the results obtained were referable to one of the components of the milk or to the particularly suitable combination of all its components. It did not occur to him that it was chiefly negative qualities that produced the results; that is, the reduction in the total amount of solids and fluids given, and that the treatment was really an especially marked form of protective treatment.

Oertel started out from a theoretical basis. He assumed, with a certain amount of justice, that after the development of a circulatory disorder it was chiefly the increased amount of fluid in the body that made a return to normal conditions difficult. He regarded the daily ingestion of large amounts of fluid as contributing greatly to the work imposed on the heart, and endeavored to correct this factor. The field of his activity explains why he came to devote especial attention to the amount of fluid taken in, for Munich, the city in which he worked, is the city in which the consumption of beer is greatest. He began his investigations and his treatment by allowing his patients to continue their ordinary mode of life, but had them measure the amount of fluid taken in and the quantity of urine voided.

In healthy people the latter usually is several hundred cubic centimeters less than the former, since water is given off also by the skin and lungs. If the amount of water taken in is reduced, in healthy individuals urinary excretion becomes almost correspondingly less; but in subjects suffering from circulatory disorders this decrease is very slight or does not occur at all. That is, by Oertel's plan of treatment an excess of water was removed from the body: circulation was relieved; the amount of circulating blood was reduced; and the restoration of normal conditions was favored.

Oertel assisted this principle of removing superfluous water not only by restricting the amount of fluids taken in but also by other measures, such as exercise, hot baths, etc. He investigated the effect of his treatment on the various forms of circulatory disorders, employing all the methods then available. Determinations of blood-pressure, hemoglobin, of the concentration of the blood, and its amount, appear prominently in his reports. In addition he also devoted much attention to nutrition in general. In obesity, the removal of water was combined with measures for reduction of the amount of body fat, a principle that he carried out in a more rational manner than did Ebstein. If the patients were emaciated he endeavored to produce an increase in their weight and so on. As far as the quantitative composition of the diet was concerned, he based his mode of procedure on the observations of Pettenkofer and Voit; that is to say, he had already adopted practically our modern point of view. But I might mention that his principle, the prescription of much protein in the food, is at variance with the restriction of fluid taken in, as I will point out later. When the disturbance of circulation was associated with edema he regarded the condition as lying outside of the scope of his specific treatment. This he considered as especially applicable in the moderate circulatory disturbances attending arteriosclerosis, cardiac weakness, and obesity.

Oertel must be regarded as the father of the scientific dietetic treatment of circulatory disorders as founded on theoretical considerations and the rational application. At present, we do not agree with many of his conceptions; but the principles on which his method was founded are still in many respects remarkable.

Science achieved the most admirable triumph when it recognized the significance of the relation of sodium chlorid to the circulation and the development of edema. It is to Widal that this conception is chiefly due. He started from theoretical considerations, and also from experiments at the bedside. After it had been established by various observations that sodium chlorid was poorly excreted by the diseased kidney, he and Strauss simultaneously hit on the idea that it was precisely the retention of this substance which was the crucial factor in the production of edema and that gave rise to its appearance. We are all familiar with the brilliant experiments by which Widal furnished irrefutable proof of this conception.

I know of few observations in the whole history of metabolic treatment that can be compared to this for simplicity, clearness, and ease of demonstration. It is a classic experiment. With this single experiment, the result of which has frequently been corroborated, the predominant part which sodium chlorid plays in the retention of water was definitely proved.

The important part played by this substance in the water content of the diseased body can also be demonstrated for the healthy individual. Permit me to make a few observations in this connection. The various organs possess a definite content of sodium chlorid which is much less than that of the blood. The muscles are poorest in sodium chlorid, containing only 0.1 per cent., while the connective tissue, with 0.3 to 0.4 per cent., is richest. According to my analyses the total amount of salt in the body of a healthy man may be estimated as 130 gm. Owing to the fact that we take in a considerable amount of table salt, about 15 to 20 gm. a day, the body always contains an excess of medium chlorid above the minimum. When a healthy person fasts absolutely or takes his ordinary diet without the addition of any salt, he gives up 10 to 20 gm. of sodium chlorid. At the same time, he loses 1 to 2 kilograms in weight, without, however, sacrificing protein and fat. He gives up 1.5 liters of fluid, i. e., lymph. If now 15 to 20 gm. a day of salt are added to the salt-free diet, the healthy body does not during the first days excrete this amount completely, but retains the 15 to 20 gm. originally lost and at the same time corresponding quantities of water, 1 to 2 kilograms, are again stored up; in other words, the excess of sodium chlorid which is retained by the body on a normal diet and under normal conditions does not contribute to an increased concentration of the juices in this substance, but demands its own amount of water for solution, and in this way augments the quantity of fluid circulating in the body.

This fact having been established, Oertel's conception of restriction in the ingestion of fluid must be subordinated to the task of reducing the sodium chlorid. Whenever this is cut down, thirst becomes less and the amount of water taken is decreased in the natural course of events, without imposing on the patients the restriction of fluids.

In general it may be said that the salt-free treatment has only seldom been carried out in its most radical form, as it had been applied by Widal in his famous experiment. This is due to several facts; in the first place to the lack of persistence of physicians and patient. While the principle of the salt-free diet appears simple enough to apply, practically it requires thorough knowledge on the part of the physician and much energy on the part of the patient. The physician will always be more inclined to reduce the edema by stimulating renal activity with drugs rather than by the principle of protective therapy.

In a large number of cases the desired effect may be obtained with theocin, diuretin, digitalis, and so on. When this is not the case, the physician sometimes prescribes a salt-free diet, but promptly abandons this if it is not quickly effective. I should like to give an example of the amount of persistence and care required, and of what excellent results may then be obtained even in desperate cases. Last winter I found in the Friedrichshain Hospital two patients with severe parenchymatous nephritis and enormous edema. Both of these had been treated for five or six months with all sorts of remedies. Digitalis and digalen, theocin, diuretin, theobromin, potassium acetate, calomel, purgatives, hot packs, and scarification, had all been systematically resorted to in the course of half a year without leading to any permanent improvement. I now gave both patients a full mixed diet with meat, eggs, potatoes, vegetables, milk, bread, zwiebach, and fruit, without excluding any article of diet, but without the addition of the least traces of salt. The bread, zwiebach, and butter also were made without the addition of any salt. In the case of one patient, a boy of 14, the weight in the course of three weeks fell from 55 to 40 kilograms, but that of the other changed but little. My colleague, Stadelmann, who knew the patients of old, expressed the opinion that but little result was to be expected. In the next four weeks, however, the patient lost 30 kilograms in weight, and the last trace of his edema disappeared. During these four weeks he had excreted about 300 gm. of sodium chlorid. In the first three weeks the kidney had been only slightly permeable for the salt, and therefore but little water could be removed from the body. After the excretory power of the kidney had been spared (*geschont*) during the first weeks a period of greater activity followed which quickly brought about the complete removal of the edema. In such difficult and desperate cases not only persistency and stern determination are necessary, but also the strongest restriction of sodium chlorid. The patient received about 2 to 3 gm. of sodium chlorid a day in his food. If he had been treated a little more laxly and had been allowed even 5 to 6 gm. only, he would never have been freed from his edema.

The importance of this observation lies in two facts, namely, (1) that the salt-free diet had proved efficacious after all other therapeutic measures had failed; and (2) that it required fully seven weeks, in the first of which no distinct improvement seemed to be obtained.

The salt-free diet is most efficacious in parenchymatous nephritis. In this condition, in which the salt does not pass through the diseased kidney, its significance is perfectly evident, and the immediate therapeutic effect is most striking. But also in other forms of passive congestion, as in cardiac insufficiency and cirrhosis of the liver, the removal of salt from the food is often followed by surprising results. The mechanism is a little different from that in renal disease. In these conditions also a portion of the excess of sodium chlorid is retained in the body, not, it is true, because the excretory power of the kidney is primarily impaired, but because of the circulatory disorder. The salt is retained in the body together with corresponding quantities of water and other components, firstly in the blood-vessels, then either as edema under the skin, or as free fluid in the abdominal cavity. On cutting down the superfluous amount of salt taken in, the increase in the edema and the transudation ceases; this is followed by a certain equilibrium and the mechanics of the circulation become more favorable. Now the kidneys begin to secrete more actively, and this is followed by removal of the edema. In many forms of broken compensation it is possible to bring about normal conditions solely by removing an excess of sodium chlorid from the food, and without the assistance of any drugs. Even pleural exudates, whose development is less dependent on the quantity of sodium chlorid than that of congestive transudates, are sometimes favorably influenced by a salt-free diet.

Let us now ask, what is the relation between the different so called treatments of Karell, Oertel, and Widal, and how have we to judge them from a theoretical and from a practical standpoint? The Widal treatment has this in common with the strict milk cure of Karell, namely, the small amount of salt that is allowed the patient. Indeed, it was Widal who explained the well-known efficacy of the milk diet in nephritis by pointing out the small amount of salt present in this fluid. The salutary properties of milk depend, not on any positive characteristics, such as a peculiarity in the nature of the protein molecule, or a specific diuretic action of the milk-sugar, the fine subdivision of the fat in an emulsion, or on any particularly favorable mixture of these substances, but rather on a negative quality, its poverty in sodium chlorid. But even milk may be too rich in salt when given in large amount, and Widal has particularly emphasized this fact. Three liters of milk, which is the minimum amount necessary to maintain equilibrium, contain 5 gm. of sodium chlorid, and this is more than many a diseased kidney can excrete. A mixed diet of meat, eggs, bread, etc., like that referred to above, contains only 1.5 to 2 gm. of salt, if none has been added.

Whereas Karell's diet is similar to that of Widal in the low quantity of salt, it differs from that of Widal in the great reduction in the amount of all foodstuffs. During the first week the patient does not receive even a fifth of his requirements, and during the first five to six weeks the physiologic minimum is never reached. During this time the patient accordingly loses considerably in body protein and fat. The principle of Karell's treatment, therefore, consists in a reduction of the amount of all the foodstuffs allowed. In many cases it is more suitable than the Widal treatment, when this is carried out in the manner in which Widal performed his celebrated experiments. But it must not be overlooked that Widal in the above instance made use of a full dietary with 120 gm. of albumin, 170 gm. of carbohydrates, and 100 gm. of fat, in order to exclude all other factors, and to demonstrate the predominating rôle of sodium chlorid in water metabolism. In everyday practice not only is it unnecessary to carry out the treatment in this way, but it may even be injurious for the following reasons:

The ingestion of all organic foodstuffs increases the amount of fluid in the body in a manner similar to sodium chlorid, though not to quite so marked a degree and by a somewhat different mechanism. Fat appears to do this least, although for the purposes of its absorption a certain amount of bile, pancreatic juice, and intestinal juice is poured out, but as it does not dissolve in the body juices and is only emulsified by these its further transportation through the lymph and blood vessels does not require the assistance of water. The absorption of the carbohydrates demands considerable amounts of water, since the glucose content of the blood-serum rises only from 0.1 to 0.3 per cent. at the most. But as soon as the glucose molecule has been deposited as glycogen or has been oxidized, it makes no further demands on the water supply of the body. The water metabolism is most strongly influenced by the protein molecule. Not only does it require for its absorption and its transportation in the body relatively large amounts of water, but its end-products, urea, uric acid, etc., also demand considerable amounts of fluid for their excretion. It is for these reasons that the ingestion of much protein makes greater claims on the water-supply and on the organs of circulation, than do other foodstuffs.

The relationship of the protein metabolism and of sodium chlorid to the water metabolism is particularly well shown in diabetes insipidus. In the true forms of this affection it is impossible to control the increased excretion of urine by applying only Oertel's principle of restricting the ingestion of fluid, but thirst and the amount of urine excreted immediately become less when the amount of salt taken in is reduced from 20 to 5 gm. The same thing happens if the quantity of albumin is cut down from 120 gm. to 60. Instead of 40 gm. of urea produced under the former conditions, now only 20 are excreted and the quantity of urine may be diminished by several liters more. In a similar way the reduction of the amount of protein in the food is of benefit in all circulatory disorders, though the effect is not quite so noticeable as in diabetes insipidus. In each instance the work of the vascular system and of the kidney is lightened.

RECAPITULATION

To recapitulate, we are in possession of three methods of reducing the amount of body fluids, and, in this way, effecting the dehydration of the body, in the first place, by lessening the amount of water ingested (Oertel's treatment), in the second place, by the reduction of the sodium chlorid taken in (the cure of Widal); and in the third place the use of a restricted dietary, especially poor in protein (Karell's cure).

Besides Oertel, the somewhat unreliable Schweninger and the layman Schroth, Von Noorden has laid emphasis on the reduction of the fluid intake. Von Noorden found this measure particularly efficacious in the polyuria of contracted kidney and in advanced arteriosclerosis. The reduction of the fluid taken in from 3 or 4 liters to 1.5 to 2 liters, was followed by a great improvement in the condition of the patients. In many instances the blood pressure fell 30 to 40 mm., the nocturnal polyuria became less, and the nocturnal attacks of angina and asthma ceased, especially when no fluids were taken in the course of the evening. Von Noorden has demonstrated that 1.5 liters of urinary water suffice in cases of contracted kidney for the removal of all the products of metabolism, and that there is no danger of uremia under these conditions. In such cases in which a great excess of water had previously been taken the effect of reducing its intake is very pronounced, and is readily explicable on theoretical grounds.

It is but rarely, however, that the effect of reducing the amount of water intake depends on this factor alone. As soon as this measure is enforced with some degree of strictness, so that the patient receives less than 1 liter of fluid per day, in most cases he will find it impossible to eat as much as before. This explains the well-recognized value of reducing the consumption of fluids in the various obesity treatments, as in that of Oertel, in that of Schweninger, etc. Schweninger allowed his patients to drink freely between meals, but forbade drinking at meals. The importance of this prescription evidently lies in the fact that, by forbidding drinking at meals the amount of food taken is reduced. The same principle is to be found in the thirst cure of the layman Schroth, in which a further loss of appettite is caused by the monotony of the diet. But I wish to emphasize especially that, contrary to the views of the laity and to the erroneous theoretical considerations of Oertel, Schweninger, etc., lessening the amount of water does not increase the oxidation of fat. This happens only in the most extreme forms of thirst cure, after the method of Schroth, when fever, abnormal decomposition of proteins and other dangerous complications occur. On the contrary, it is possible with proper management to carry out obesity cures not only without cutting down the water ingestion, but even by giving large amounts of fluid, as has been suggested recently by G. Rosenfeld. This clinician favors filling the stomach and intestine as much as possible with water, in order to control the subjective sensation of hunger. It is possible that these large amounts of water may stimulate metabolism and the oxidation of fat. That this is true has apparently been demonstrated by Heyl.

I believe that the effect of reducing the amount of fluid alone is seldom dependent on this factor only, as for example in chronic interstitial nephritis. In general the measure acts indirectly by inducing the patient to become unconsciously more abstemious in eating and usually to avoid strongly salted food which increases thirst.

The reduction of sodium chlorid is indicated especially in the edema of parenchymatous nephritis, but it is also useful in combating some of the symptoms of contracted kidney, such as headache, uremic asthma, angina pectoris, and pulmonary edema. Diabetes insipidus and cirrhosis of the liver also require mention in this connection. It seems to me that it is wrong to allow patients who have been relieved of dropsy and other chief symptoms by a Widal treatment to return to their ordinary salty diet. Although the excretory capacity of the diseased kidney undergoes considerable improvement after a period of functional rest, so that it may at times be rendered capable of excreting 5 to 10 gm. of sodium chlorid instead of only 1 to 2 gm., it would be wrong to impose on it a normal amount of work. In cirrhosis of the liver I also attach much importance to a long-continued reduction in the salt intake. While the reaccumulation of ascites after aspiration does not depend exclusively on an excess of ingested sodium chlorid, this is none the less an important factor. I would call attention to Achard's instructive case of cirrhosis of the liver in which he succeeded in removing the ascites five different times by enforcing a salt-free diet. Patients with diabetes insipidus must permanently refrain from a salty diet, since it is impossible to improve the capacity of the diseased kidney for excreting concentrated urine.

I now come to the third point, the reduction of the protein intake. I have already indicated that Oertel's two principles of low water and high protein intake—he required up to 200 gm. of protein a day—are at variance with each other. His regulations date back to a time when the study of metabolism was chiefly concerned with the behavior of the proteins, and the maintenance of the nitrogen equilibrium was held to be the most important consideration from a therapeutic standpoint. At that time it was believed that the bodily weakness which sometimes appeared in rapid obesity cures was due to a loss of muscle protein particularly by affecting the heart. But I should like to call attention to the fact that a loss of albumin content and of muscle volume by no means invariably leads to impairment of the capacity for bodily work. (This is plainly evident when persons unused to bodily exercise take up some mild form of sport, especially moderate mountain climbing. In spite of the fact that there is at first a prompt loss, both of fat and of muscle tissue, the cardiac and body musculature improve greatly in functional capacity). Felix Hirschfeld was the first to oppose the theory that a patient with heart disease should be protected against further weakness by abundant food, particularly by the administration of large amounts of protein. His firm stand in this respect was well grounded. He showed that reducing the amount of water alone did not suffice to restore compensation, but that it was necessary at the same time greatly to cut down the food taken as a whole. His opposition to Oertel's teaching is entirely correct on this point, and this has been demonstrated by many clinical observations.

In addition to its immediate effect on water circulation, a diet poor in proteins probably acts favorably in other directions also. Chittenden has called attention to its advantages in healthy persons, without, however, being able to explain this result in detail. In some diseases we can plainly demonstrate the harmfulness of a diet rich in protein, as, for example, in diabetes mellitus. In this condition it impairs the tolerance for carbohydrates, sometimes to a most pronounced degree. In opposition to Oertel's opinion, reduction in the ingestion of protein is particularly to be recommended not only in cases of broken compensation, but also in the case of cardiac patients who were previously high livers and exhibit a certain degree of plethora. It is also particularly indicated in the later stages of chronic interstitial nephritis, when uremic manifestations of greater or less severity appear. These are due largely to the retention of nitrogenous end-products of metabolism. I do not wish by any means to go to extremes and recommend always a minimum of protein in such cases, but I do consider it more advantageous for a nephritic in his last years to sacrifice a few kilograms of weight on a scanty protein diet and feel fairly well, rather than to maintain his weight at the expense of chronic uremic manifestations.

What shall be our attitude in regard to these forms of treatment in an individual case? I think that it is best if we first attempt to carry out each one of the three treatments exactly according to the directions of Karell, Oertel and Widal, in suitable cases. Only in this way can we form a correct opinion of their principles and their utility. Each one of these principles of water removal is attended by certain difficulties in its practical application, and these can best be overcome at first by strict adherence to the rules laid down by the three authors. When we have done this a few times we shall be able to deviate from the regulations and modify them in detail. Then we shall be able to determine whether it is more advantageous in a given case to secure relief for the circulation by restricting the intake of water, by a salt-free diet, or by reducing the amount of albuminous food, which as a matter of fact reduces itself to forbidding or restricting the consumption of meat but sometimes also of milk. In the Karell treatment I consider it particularly important to adhere carefully to the four-hour intervals between the separate portions of milk allowed the patient. It is frequently necessary to use skim milk, as Karell advises, in order to accustom the stomach of the patient to the monotony of the milk diet.

The salt-free diet of Widal is theoretically easy to administer, but one is apt to encounter the opposition or lack of comprehension of the cook. It is hardly necessary to forbid any article of food if only it is given in its natural condition and without any addition of salt on the part of the human hand. Of the fresh articles of food only salt-water fish are to be excluded. The butter should be unsalted and the bread must be specially baked without salt. Of course all forms of preserved meat and fish as well as cheese must be avoided, for these contain a great deal of salt. Milk also can be permitted only in small amounts, for it contains about 2 gm. of sodium chlorid per liter. By giving chiefly cereals, oatmeal, rice, hominy, custards, jellies, puddings, fruit, and desserts, the lack of salt is made more endurable to the patient.

If we wish to allow a patient a certain amount of salt after he has been for some time on a salt-free diet, we should not content ourselves with the general direction that he shall use moderation in salting his food, but prescribe a definite amount that is allowed. The conditions are comparable to those in diabetes mellitus, in which instance it is necessary to give the patient the most precise directions. I, myself, manage in this way. I have the food prepared without salt just as during the strictest period; then I give the patient small, accurately weighed quantities of salt, say 2, 4, or even 6 gm., and permit him to add this salt to his food in whatever way he wishes during the twenty-four hours.

The dietetic measures are just as important in the treatment of circulatory disorders and renal diseases as is the dietetic treatment of the glycosurias. I should feel much gratified if what I have said should enable any to gain a deeper comprehension of the principles involved and to apply them more widely than before.

Berlin, N. W., Karl-Strasse 5b.

Absence of Puncta Lachrymalia (Bilateral).—A child, aged 10, suffered from epiphora since birth. An attempt was made to pick up the opening in the canaliculus in the left lower lid, without success. The right gland was partially removed through an incision at the outer margin of the upper lid. Not succeeding, both lachrymal glands were removed through the conjunctiva at outer angle of the upper lid.—L. Cole-Baker, *Proc. Roy. Soc. Med.*, July, 1910.

HOUSE QUARANTINE *

H. COHEN, M.D.
Assistant Chief of Bureau of Contagious Diseases, Department of Health
CHICAGO

It is hard to separate the causation of disease in from the influence which organized society exercise him. The relations are many and complex, acting divers ways, and not always with visible directne For one thing, if you think of it, the important fact of heredity in the causation of disease is, truly a broadly considered, a social factor. And when we mention environment, the other half of the entire etiologic circle, it is readily seen that that in particular depen on the social aggregate and its intelligence and activit in behalf of the preservation of health for its compos tion and complexion, for the power of doing good evil, for its influence on health and disease.

Man *probably suffered from certain diseases and acc* dents in his pre-social days, but that the greatest percentage of man's present ills is socially caused, directly or remotely, is a certainty. Whereas the above applies, more or less, to all diseases, it is particularly applicable to the contagious diseases. Seed, soil and the planting of the seed are the three requirements in the causation of contagious disease; man himself fulfills two of these; he offers the soil and acts as disseminator of the seed through the avenues of social intercourse.

It follows that the control of contagious disease is a proper and necessary function of organized society. The individual is now considered an asset of the state, which would suffer loss by his illness or death, even if the effects were limited to himself. How much greater the mischief and loss is to the community in the case of contagious disease, anyone can readily see. And the community owes each of its citizens protection against contagious disease as well as against fire, against robbery and murder.

THE QUARANTINE PROBLEM

When the prevention of disease first claimed public attention, when it first began to be the concern of organized government, it was readily seen that the gathering of health statistics was of prime importance. And so it is, if properly utilized. Health statistics should furnish a guide as to proper health measures and methods; it should indicate to us the preventable leaks to life and health; it should be an aid, and not an aim. By itself it will accomplish nothing. We must not stop with that. Advanced and aggressive attitude and action is urgently needed in the control of contagious diseases.

In house quarantine, we have an important measure in the safeguarding of the well from the existing foci of infection. It is a truism to say that the essential features of the contagious diseases are their communicability, yet the fact needs emphasizing. There was a time when, owing to the lack of knowledge as to the cause, and by reason of the prevalence of superstition, epidemics of contagious diseases were attributed to visitations from heaven. Those times are, happily, passed. We now have a more exact knowledge of the cause of contagious diseases. We are now better able to cope with them because we more fully understand the actual determining cause, the various pathogenic bacteria, the contributing factors, and the means and [illegible] these germs are carried from the sick quarter lite we must make intelligent application of this me edge if we are to minimize these diseases. We in ve that persistent application of the principles of ti ntive medicine will ultimately lead to the almost ol eradication of contagious disease.

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* Read in the Section on Preventive Me of the American Medical Association Session, held at St. Louis, Ju

w survey of the premises of the quarantine problem h s to the fore the following as the most salient:

irs The patient the only original source of infection.

2. The patient and contacts the most dangerous carriers neading infection.

3. Houses and objects such as bedding, clothing, toys, etc., harbor and give off infection.

How best to meet and circumvent the difficulties presented by these three factors is the crux of the quarantine question.

Before outlining the measures and methods here advocated and now in force in Chicago, let us dwell for a moment on conditions as they are with respect to the management of contagious disease and the many relations which it has to the public health. The statements here made are chiefly based on experiences in this work gained in Chicago. I am sure that they apply to a greater or lesser extent, to all larger towns and cities.

In our daily work we come in contact with people of all races and nations, people of all degrees of material welfare and educational status. We find the greatest disregard for the proper management of contagious disease, the greatest hindrances, due to the following causes:

1. The thraldom of inhumanizing poverty in which great numbers of the foreign-born population find themselves, with the woeful overcrowding attendant on it.

2. Ignorance and superstition—dense, miry and demoralizing—productive of a stupid disregard for all health regulations.

3. A peculiar nonchalance on the part of the semi-intelligent who think that they know it all and need not be taught how to properly care for a contagious case or themselves be subject to necessary restrictive measures.

4. The outright and outrageous assertion of self-interest against community interest on the part of some of the wealthy families and individuals in the community.

The following concrete instances elicited in a recent series of investigations to determine the exact mode of spread of contagious disease, will illustrate conditions as they are:

Series 1.—Diphtheria, six cases, two deaths. A child took sick with "sore throat." No physician was called in. The child grew worse and died. In the next house lived a relative of the above family whose daughter took sick several days later and also died. Four more cases rapidly developed in the surrounding families. Investigation showed that all had been visiting each other, had traded in the same neighborhood stores and otherwise neglected the most ordinary precautions.

Series 2.—Scarlet fever, four cases. First patient took sick on the eleventh of the month. The family in which the case occurred owned a small store, and through fear that the business might be interfered with, called no doctor. The case was not discovered until the fourth of the following month—nearly a month after it developed. Meanwhile the patient was out playing with other children, three of whom took the disease from her.

Series 3.—Scarlet fever, six cases. A boarder in a poor family returned from the hospital where he said he had a "sore throat" and a "breaking out." Eight days after his return the 19-year-old son of the family, who shared the same bed with the boarder, developed scarlet fever and two days later capable children of the same family came down with ead of three patients were removed to the hospital ed to seek another place. The house to impose on it a normal amou

was immediately disinfected. Within a week two more children came down with the disease.

Series 4.—A youngster who was delivering newspapers into a scarlet-fever-infected house, himself came down with scarlet fever. His playmate and companion who went around with him while delivering the newspapers, also took the disease.

Series 5.—A little girl convalescing from scarlet fever met her chum; the usual kissing and embracing ensued. Several days later the other little girl was stricken with scarlet fever.

The instances are innumerable, repeat themselves everywhere, and are well known to you. They go to show that the people are ignorant of the primary laws of contagious disease and of the danger that lurks in them. It proves that we have neither sense enough to protect ourselves, nor conscience enough to protect our neighbors. It indicates a degree of public lethargy toward the existence of preventable disease and death that harks back to the dark ages.

In another series of investigations to determine the source of infection of cases of diphtheria and scarlet fever reported during the period of a week, the following was learned from those whose direct connection with a previously existing case was definitely established.

1. Twenty cases were traced to the association with a patient in the immediate vicinity.

2. Ten cases were due to association at school with children in whom the disease was unrecognized.

3. Four cases were caused by contact at the playgrounds with children in whom the disease was mild or undeclared, or with convalescing patients.

4. Three cases were found to be the result of an unreported case.

5. Two cases owed their existence to previous cases in the family.

6. Many cases were attributed by the family to a "cold"—only a predisposing factor, if true. More likely, the first signs of the illness, particularly in diphtheria, were taken for a cold.

The lesson is the same no matter what superficial cause may be assigned. It is always association with a previous case, in one way or another.

In the poorer sections of the city, it used to be the usual thing to find mothers with diphtheria-sick children in their arms gossiping with neighboring women likewise with babies in their arms and with several older children clinging to their skirts. Tales of woe are exchanged, sympathies are extended, and disease is given in return. Children suffering from scarlet fever in the convalescent stage were almost always found outside when the weather permitted, with hands desquamating, neck perhaps swollen with suppurating glands, surrounded by a crowd of boys all gamboling on a vacant lot, all absorbing the insidious elements of contagion. Visiting and receiving callers during the quarantine period is quite the thing with certain classes of people. Allowing the inmates in contact with the patient, as well as the patient himself, to run loose on the streets and mingle with the well, is an almost universal practice.

When the people shall appreciate the enormity of the crime of throwing a burning fagot of contagion into a mass of disease-inflammable children, such practices as above will be no more. Then the burden of sickness, the host of innocently crippled children and the toll of death will be much less—very much less. That the danger of conditions as they exist has been theoretically recognized is attested by the laws and ordinances everywhere in existence, if not in force. In almost all cities there are adequate laws and ordinances which, if rigidly applied, would meet the problem. The fault lies with the lack of enforcement of the rules. The attempts at enforcement are spasmodic: It usually takes an epidemic to stir the people into apprehension and the authorities into action. Here, too, in the very field of preventive medicine, that famous "ounce of prevention," has not yet been pounded into consciousness and practice. As a rule, the entire problem of the care and handling of contagious disease, the proper observance of quarantine, is at present left to the good or ill will of the variously constituted communities with their different grades of intelligence, material environment, hygienic knowledge and moral sense.

The practical measures now in use in advanced communities do not adequately take care of the situation.

Placarding premises harboring a contagious disease neither keeps the inmates in nor does it keep visitors out. It is a good measure, but in itself not sufficient.

Initial inspection of cases reported, where in use, establishes a perfunctory quarantine, but does not and cannot maintain it.

Termination by disinfection after the patient and contacts have mingled with the public and spread contagion broadcast is like locking the stable after the horse is stolen.

The needs of the situation are for better laws where the laws are deficient; for action tending toward the rigid enforcement of quarantine by prompt reporting, placarding and establishment of quarantine of infected persons and premises.

The need—the greatest need—is for a stringent thorough-going personal inspection of quarantined premises and cases they hold every day, or at least every other day. The need is absolutely to keep the inmates in and the outsiders out during the quarantine period. Those ordered to live away from home must be made to stay away. The exclusion of those living on the premises in a different and properly separated part of the house, as prescribed, from the rooms occupied by the patient and attendant must be enforced at all times. The need is for supervision of the means of taking in supplies into the infected house and particularly the manner of removal of articles from the premises.

In brief, there is need for personal knowledge of each case, the respective district, its inhabitants and the conditions obtaining there; there is need for bringing this knowledge to bear on each and every phase of the contagious disease situation; there is need for a man to be constantly on the ground to study, observe, teach, watch, correct and enforce the observance of quarantine as above outlined.

THE ENFORCEMENT OF QUARANTINE IN CHICAGO

In the beginning of December, 1908, the contagious disease situation as pertains to scarlet fever and diphtheria, became threatening. Neighborhood epidemics were springing up in every section of the city. It was feared that the experience of 1907, when half of the entire city was enveloped in scarlet fever, would be repeated. One of the worst local outbreaks occurred in the south side of the city and originated from several cases of scarlet fever found in the "peeling" stage, in a parochial school.

From Dec. 15, 1908, to Jan. 26, 1909, thirty-six cases of scarlet fever were reported in rapid succession from an area comprising 144 city blocks. Conditions in other sections of the city were similar. I then proposed the quarantine plan now in force, of which the following are the outlines:

1. The city was to be districted, for purposes of adequate control, into more or less equal divisions, taking into account the extent of territory and the number and character of the population in the respective districts.

2. A quarantine officer and disinfector was to be stationed in each district.

3. It was to be this officer's duty to enforce the observance of quarantine, to have an intimate knowledge of every case and its environment, to hem it in and hedge it in so that it would not give rise to other cases, to know when it was ready for disinfection, and to disinfect same when ready.

4. He was to report daily as to the condition of his district, the number of current cases, the number of inspections, the number of disinfections, etc.

This plan was applied to the district above referred to. On Jan. 30, 1909, strict quarantine of all infected persons, premises and contacts, was instituted. House-to-house calls were made by our inspectors each day or every other day, as conditions required. Working members of the family in which contagious disease existed were compelled to stay away from the infected premises; those remaining on the premises were properly kept away from the patient and attendant. The delivery of milk and other supplies to the infected premises and the removal of the necessary waste were regulated in accordance with the quarantine regulations. Semipublic places, such as grocery stores, bakeries, meat markets, candy stores, etc., were warned against admitting any one from infected premises. Visitors were barred and excursions prohibited. Quarantine became a fact.

Where cases were ready for termination, patients and inmates, premises and belongings, were disinfected, and quarantine raised.

The results obtained were very gratifying, in spite of the newness of the task. In the next nineteen days, but one new case appeared, on February 2, and it is probable that the infection dated prior to the beginning of rigid enforcement of quarantine. On February 20 only twelve cases remained in the district.

This experiment was repeated and tried out in two other districts widely different in complexion and distantly separated. One of these was taken under control on February 24 with forty-eight cases of scarlet fever and diphtheria in it at the time. In a month the number of cases were forced down to nineteen, a reduction of nearly 60 per cent.

At the same time we quarantined another district with thirty-three cases in it. At the end of a month the number of cases current were fifteen, a reduction of over 54 per cent.

Following the above experiments and their results, the plan was put into operation over the entire city, and applied to all cases of diphtheria and scarlet fever. This plan will now be described in somewhat greater detail.

It is readily seen that absolute isolation of the patient is the keynote of the entire problem. Not all cases are similarly situated with respect to the immediate surroundings. Some of the cases are located in fine residences, others in flats, still others in hovels. All throughout it is a process of adaptation to environment and all throughout the essential of isolation is kept in mind.

The patient and attendant are put into one or two rooms at one end of the house or flat. This part of the house is separated from the other rooms in the house by having the intervening door locked and sealed, provided there is a separate entrance to them. They should also contain all the necessary household facilities such as water, toilet and cooking facilities. Here the patient and attendant, nurse or mother, as the case may be, are required to remain during the entire quarantine period. No one is allowed to enter their quarters except the attending physician and the health officer, when necessary for the purposes of control. The body and bed linens are to be disinfected before removed, the garbage and house sweepings are to be burned or disinfected, in fact, all the details of the hygiene of the sick-room are under surveillance of an officer of the health department.

Where such ideal conditions obtain, the workers of the family are allowed to go about their business without any interference, providing however, that at no time is there any direct or indirect contact between them and the patient or attendant. The part of the house which they occupy is, as said above, separated by a locked and sealed door from the patient's quarters. Where the bath-room, cooking and the other facilities of the house are in use by the patient, the workers must arrange for the use of these facilities elsewhere.

But ideal conditions are not found everywhere, as every one knows. In many cases the construction of the flat or house will not permit absolute isolation as above indicated; the family may occupy a four-room flat with only one outside entrance, where such arrangements as above outlined are manifestly impossible. Again there may be other children in the family and the people too poor to employ a nurse. It may be said that the greater the difficulties in the establishment of good quarantine, the greater the necessity for it. It is no dead subject; it is not cut and dried; it requires the exercise of sound hygienic principle, common sense and tact. Where the patient cannot be perfectly isolated, we insist that the working members of the family should live away from home while the case is in progress. If they remain at home, they are not allowed to continue at their occupations. These are essentials that we absolutely insist on.

We not only center our attention and efforts on the persons of the patient and the other members of the family, but we are, in this work, concerned with the innumerable details of human life in so far as they have a bearing on this problem. In flat buildings it frequently happens that there is one toilet for the use of two families living on the same floor. In such cases, the well family is instructed to arrange for toilet facilities elsewhere in the building, and the members of the family under quarantine are to use the nearest toilet.

Another important feature to which I want to call attention is the particular effort that is made to protect the other children in the same family where there is a case in existence from infection. From the health and humanitarian points of view, it makes no difference whether the second patient bears the same patronymic or not—whether it is Smith or Jones. We are, in a way, more responsible for a second or third case in the same family, because we ought to have anticipated and prevented it. In diphtheria, the problem is partially solved by immunization, but in scarlet fever nothing short of removal or rigid separation of the well from the sick in the family proper will save the susceptible.

This is not fully recognized. We owe protection only not to others outside of the family, but also to the members of the afflicted family. To this end mothers are especially warned to beware of the dangers of combining the duties of nurse and housekeeper where there are other children in the family. The families afflicted with contagious disease are guided and helped through the trying period of the illness in every way possible.

We aim to do the work in a scientific and sympathetic way. While it frequently becomes necessary to be insistent and stern in order to protect the public health, no undue intrusion on the rights of the individual is practiced.

We recognize that the best results can be obtained by securing the good will and cooperation of those with whom our task lies. We try to make them conscious of the fact that they owe a duty to the community; to make them see their self-interest in the light of the community interest.

The correlative factors in this work, operating for or against it are the following:

1. Economic conditions.
2. Education.
3. Hospitalization.
4. Policing.

Economic conditions, poverty and its congener, ignorance, are by far our greatest opponents in this work. Rigid quarantine no doubt works a hardship on many poor families; it calls for a sacrifice of an altruistic character that many do not understand.

Education is our greatest ally. To bring knowledge to the ignorant and awaken a sense of duty in the careless is the first step. In a task of this kind, we can look for the full fruition of our work only when the poor and ignorant better understand their own interests in these matters and the well-to-do and well-informed have been sufficiently impressed with the necessity of giving thought to the interests of others. In this campaign of education the family physician occupies an important position. His efforts and influence should be freely given to the cause of health.

Hospitalization of contagious cases is, of course, the surest means of securing isolation of the patient. It is, unfortunately, impossible to always do that at present, both on account of the lack of adequate hospitalization facilities for contagious cases, and for the reason of an opposed public opinion to such a measure as universal hospitalization. It has, however, a two-fold bearing on the quarantine situation.

On the one hand, the rigid quarantine regulations induce many families to send the patients to the hospital; on the other hand, the fear of having the patient forcibly removed to the hospital in case quarantine regulations are violated makes them live up to these regulations.

It frequently becomes necessary to police the quarantined premises, when the people are careless and refractory and the danger of the spread of the disease is considerable. This always has a salutary effect. It convinces them that the department means business and they readily fall into line and are willing to learn and observe the regulations.

This system of quarantine enforcement in Chicago, as far as diphtheria and scarlet fever are concerned, has been in existence a year now. One year is a very short period for such an undertaking. The difficulties were many, and the means at hand, as far as money and men are concerned, were inadequate for the task in hand. Yet a considerable improvement in conditions was achieved, both as to the educational influence it had on the public, resulting in a changed attitude towards necessary health measures and a broader knowledge of the same, and also in its direct bearing on the morbidity of scarlet fever and diphtheria. This system of quarantine regulation and surveillance was inaugurated in May, 1909. It did not get well under way until about September. Here is a comparison of the number of cases reported during the twelve months preceding quarantine enforcement, with that following it:

ment has been to place around the mask a rubber covering which confines the vapor and assists in making the anesthetic more manageable.

If one ounce of the oil of bergamot or terpineol is placed with 3 ounces of water in the hot-water bottle, the odor of ether or chloroform will be so disguised that the patient will be unable to distinguish when the anesthetic is turned on, and consequently no resistance or asphyxial symptoms present themselves in going under the anesthetic. Then again, it is much pleasanter for the surgeon, nurses and others in the room to smell the oil of bergamot or terpineol than to be constantly inhaling the odors of ether and chloroform.

At any time the anesthetist can give either chloroform or ether, or any combination of the two, by simply turning the single stop-cock, the change being made in less than a fraction of a second, all of the vapor passing through the third bottle, usually filled with hot water, and terpineol or a hot neutral oil. Unquestionably a smaller amount of anesthetic is used with this apparatus, or with some similar apparatus, than with any other method now known. It has been used constantly in some of our largest hospitals since 1905, with increasingly gratifying results in the following particulars:

1. A smaller amount of anesthetic is used. In a chloroform anesthesia, in which ether was contra-indicated on account of an ulcer in the stomach, I used 2 drams of chloroform for a twenty-five-minute operation. Two or three ounces of ether with one to two drams of chloroform per hour is the usual amount used.

2. The technic can be acquired with less danger to the patient than with any other anesthetizing method. In getting the patient entirely under, with this apparatus alone, excitement is usually absent, or so slight that it is unobjectionable.

3. In over 90 per cent. of the cases unpleasant after-effects are entirely absent.

4. A continual narcosis is always maintained, as we know exactly what per cent. the patient is getting at all times, and in addition the gradations are easily and readily made by moving the one lever according to the degree of narcosis demanded by the operation. An intermitting narcosis, which is wrong in principle, is thus avoided. It is especially indicated for nose and throat operations, and is the apparatus for mastoid operations. The anesthetist can maintain primary anesthesia, moving backward and forward between what is commonly known as the second and third degree of anesthesia, without once arousing the dangerous vomiting center. All of the vapor, being warmed, is more respirable, reducing the after-effects and increasing its safety as regards life. With this attenuated vapor, an infant three days old can be safely anesthetized and an alcoholic can be easily kept under, after reaching the surgical stage. All patients can be narcotized within five minutes, and with this warmed vapor, the kidneys, heart and lungs are never seriously affected.

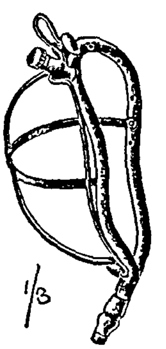

Fig. 2.

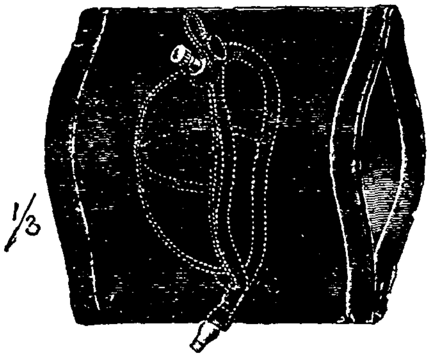

Fig. 3.

Fig. 2.—Illustration of mask one-third size.
Fig. 3.—Illustration of rubber covering for mask, which helps to prevent cooling and waste of the anesthetic.

In order to discover the value of passing this vapor through hot water, the following tests were made by Dr. Chas. Baskerville, professor of chemistry, College of the City of New York:

1. Pure oxygen was passed for seventeen minutes through 4 ounces of anesthetic ether, the resulting mixture passing through the hot-water bottle with the water at 60 C. The first 10 c.c. of distillate were collected. The ether used in this test had given a pronounced aldehyd reaction when allowed to stand over potassium hydroxid for six hours, but the distillate obtained in the above experiment gave only a slight response.

2. An experiment was made, using water at 40 C. and applying external heat to the water-container sufficient to insure vaporization of the ether. The ether distillate obtained under these conditions, gave a negative reaction for aldehyd. It will appear from these results that the aldehyd is removed when ether vapor is passed through water in the neighborhood of 40 C., and that the aldehyd content of the ether passed through is considerably diminished and its toxic value is especially lessened, when the water is kept at a temperature in the neighborhood of 60 C.

The vapor apparatus may be used in combination with a vacuum water pump, similar to the one used by dentists for removing blood and secretions from the mouth and throat in operations about those parts, in which it is necessary to remove the mask. The anesthetic vapor in this instance is administered through a metal tube attached to the delivery tube of the apparatus. I have improved the pump by the addition of an adjustable connection that can be attached to any hydrant or tap.

124 East Sixteenth Street.

EYE-STRAIN A CAUSE OF EXOPHTHALMIC GOITER

GEORGE M. GOULD, M.D.
AND
A. C. DURAND, M.D.
ITHACA, N. Y.

Exophthalmic goiter, it is said, is, or may be indicated by four symptoms, tachycardia, exophthalmo goiter, and tremor. Tachycardia is usually held to the early, leading, or primary symptom, the other three trailing off in relative unimportance. Indeed, any one or two, perhaps three, of the four may be absent, and yet the real morbific Proteus be present, concealed and yet pathogenic by means of the one or two remaining.

Pathology of a serious or rational standing has really nothing to offer as to the cause and nature of the disease. The oculists have kindly shoved the problem off into the far country labeled "ductless glands," and it has been quizzically suggested that the exophthalmic principality of the quadruple-crowned and loosely joined grand-duchies, owes all its independence to a wondrous little, and little wondrous, "muscle of Müller," situated at the orbital fissure. How it is possible for these tiny fibers by contraction to produce the distortion of a huge, or o any degree, of exophthalmos, with its attendant signs an symptoms, what may be the physiologic function of t muscle in the first place, and consequently what is morbid function, how the thyroid secretion can exec such a task—all these, and more, raise the corners the mouth of the genuine scientist. Indeed, the illog alities of the symptom-complex and of the group-na illustrate the tendency in all of us to clap an inappropriate name down on a lot of unknown facts, and "stand pat" in the comforting delusion that something has been done as regards etiology and therapeutics.

Now the forgotten *reductio ad absurdum* of this pathologic pathology lies in the fact that each day we all have patients presenting one, if not two, of these four "typical" symptoms, and we never dream of Dr. Basedow, or of Dr. Graves, or of Dr. Exophthalmic Goiter. Far more startling and undreamed of is the fact that we oculists who are also refractionists, have long been curing our patients who exhibit these symptoms, when they are presented singly, and doubtless also when in twos and threes. Nothing is more certain than that the eye-strain of ametropia often causes tachycardia, often causes tremor, often both combined. One of us has already reported a number of cases of tachycardia cured at once by the correction of ametropia, and we could add others. To these might be added cases of tremor. The coexistence of lateral spinal curvature must, and does, probably, add a causative factor, and certainly needs scientific study at the hands of serious-minded pathologists. The essential thing is to reach the precedent functional or physiologic cause of the late morphologic symptoms. In this respect all of our pathology is glaringly in fault and needs revolutionizing. When we find intense and long-continued eye-strain preceding the appearance of either of the three chief symptoms we at once get a glimpse into their possible origin, and especially if one after another is developed seriatim. This more particularly holds good if the exophthalmos is monocular.

What may be the mechanism whereby the symptoms are produced by eye-strain is another matter, and does not, at first, concern the clinician, or even the sensible pathologist, so much as the establishment of the fact. How tachycardia may be caused by eye-strain, and how tremor may result from eye-strain or scoliosis, is easily seen, but how exophthalmos is produced by eye-strain is not so readily understood. Less easily still may one explain the ocular origin, if such exists, of goiter.

Among a considerable number of cases that we have had which showed the causal relation of eye-strain and "Graves' disease" is the following:

July 15, 1907, Miss L. R., from Ohio, consulted us on the recommendation of Dr. I. She had been suffering from headache, lassitude, and intense pain in the back of the neck for a year, and the left eye began protruding about eight months previously, becoming more pronounced up to two months prior to her visit. No goiter existed. The pulse-rate was about 105, but variable. An oculist, some two months previously had ordered glasses, after three days of mydriasis, B.E. sph.+ 1.00!!! The static error of refraction, however, we demonstrated to be as follows:

R.+sph. 1.50,+cyl. 0.50, ax. 90°=20/30
L.+sph. 1.25,+cyl. 0.50, ax. 90°=20/30

For the ten or twelve hours during which the eyes were under the mydriatic the exophthalmos of the left eye disappeared almost completely, and this eye would not have seemed different from its fellow. When the cycloplegic wore off the next day the exophthalmos returned.

This temporary recession of an exophthalmic globe under mydriasis had occurred several times in our practice before, but in Miss R.'s case the sequel was different; for during the six months following the securing of the spectacles correcting her ametropia the exophthalmos slowly and finally completely disappeared.

Graefe's sign did not disappear under mydriasis, but in September, 1910, it was not present, and, so far as the exophthalmos is concerned, no difference was to be detected between the two eyes.

Of course the headache, neck pain, tachycardia, etc., passed away at once with the exact ametropic correction. At the last visit, also, all amblyopia had disappeared, the acuteness of vision being perfect. The ophthalmoscope revealed considerable ophthalmovascular choke, but the most decided symptoms of this disease were not present.

Nothing is needed to demonstrate the fact that in this case the cause of the exophthalmos and tachycardia was eye-strain. Whether goiter would, in time, have been added to the two other symptoms of hyperthyroidism, cannot now be asserted or denied.

The conclusion is suggested that, as multitudes of goitrous patients have no tachycardia or exophthalmos, the goiter symptom is somewhat independent or secondary. It appears more than suggested that a common, if not the chief, cause of so-called exophthalmic goiter is eye-strain. Probably the tachycardia is the first of the ocular reflexes instituted, followed by the exophthalmos, as, chiefly, a secondary vascular phenomenon. (The exophthalmos of choking, or strangulation, or cervical compression, is suggestive.) It is not beyond comprehension that heightened blood-pressure may induce goiter, although the neurotic origin seems more sensible. Lastly, it hardly needs mention that the only cure in such cases must be through prevention, stopping the long preexisting eye-strain by accurate correction of ametropia. Perhaps, rarely, may a cure be expected when decided exophthalmos (and especially of the *two* eyes) has been established.

For twenty years or more one of us (G. M. G.) has been urging the profession to make a differential diagnosis in cases of headache, migraine, neurasthenia, dyspepsia, etc., by cycloplegia. Not one has cared enough about the matter to carry out this simple test. Consequently, it would probably be of little use now to advise mydriasis as a method of testing whether the early symptoms of exophthalmic goiter are due to eye-strain. But why not?

ELEPHANTIASIS OF SCROTUM AND PENIS WITH OPERATION

RAYMOND RUSS, M.D.
SAN FRANCISCO

The following case history is presented because of the rarity of this condition on the Pacific coast. Tropical diseases about the Bay of San Francisco are rapidly increasing in number, and the practitioner must be on the constant lookout for them.

History.—A young man, aged 30, single, a cigar-maker by occupation, was referred to me for extensive swelling of the penis and scrotum. This patient had been in Mexico in 1900 for three months, and in 1902 for a period of six months. There was no other history of tropical exposure. He stated that the disease appeared insidiously and had never been accompanied by pain. There had never been periods of chill, high temperature or diaphoresis, but he said that at times there had been local heat in the scrotum, although unaccompanied by general fever.

Examination.—The scrotum was found to be very large, about the size of a small cocoanut. The penis presented an edematous collar, 4 cm. in width, just back of the corona glandis. On palpation the testes were found to be of normal size and freely movable within the scrotal sac. The size of the scrotum was due to an extensive involvement of its structure. The tissue was hard and brawny to the feel; it did not pit on pressure and was dark red to a light brown in color in places. The swelling was most noticeable directly under the penis, and extended to within 4 cm. of the perineum in the median raphe. The tissue resembled more than anything else the hard, brawny induration which so frequently occurs in the skin of the neck after extensive operation on its glands for malignant disease. There was no edema in any other portion of the body and the patient stated that there had never been any. One year ago the patient was operated on for adherent prepuce. This was only partially dissected away and the corona glandis was but partly clear at the time of my examination. At the frenum was a tumor mass of hard tissue closely resembling that of the scrotal involvement and about the size of a nickel, being possibly slightly thicker. This was made up of the adherent prepuce, and the mucous membrane of the glans penis was not involved. Back of the corona glandis there was a constriction of tissue of about 0.25 cm. in width, and above this point for at least 4 cm. the tissue was swollen and redundant, presenting the characteristics of the scrotal involvement. The femoral glands were not perceptibly enlarged. The patient's general health had always been good. The heart and lungs were normal. Tuberculin reaction negative.

This patient was referred to Dr. Herbert Gunn, who confirmed the clinical diagnosis of elephantiasis, and made several examinations for filaria, all of which were negative. The patient was placed on a hydragogue cathartic and the scrotal tumor was soon considerably reduced in size, but the skin induration was unaffected.

Operation.—September 9, 1910, at University of California Hospital the patient was operated on. I was fortunate in having present at the operation Dr. P. S. Rossiter, United States Navy, who has had a large experience (eighty-two cases) in the operative treatment of this disease in Samoa. The technic developed by Dr. Rossiter was carefully followed. With the patient in the lithotomy position, the lines of incision on the scrotum were outlined. They were made in perfectly sound tissue, meeting above on the under surface of the penis, then sweeping out in a slight curve to within 1 cm. of the perineum. The testes being well lifted, the tumor mass was grasped in the hand and rapidly cut away along the lines which had been marked. The testes were found to be normal. As the remaining lateral flaps were small, coaptation was obtained with some difficulty by means of tension sutures of chromic gut and the incision carefully united by a continuous horsehair suture. With a sound in the urethra the tumor mass near the frenum was removed by free incision and the prepuce dissected away from the corona glandis. Incision was then made transversely about and high up on the body of the penis, and the portion of involved skin between this point and the corona glandis removed. Sound skin was then brought down and united at the sulcus by means of four tension sutures of silkworm gut and a continuous suture of horsehair. The wounds healed kindly and the patient was discharged from the hospital on the eighteenth day.

240 Stockton Street.

A CASE OF CHRONIC APPENDICITIS SIMULATING NEOPLASM

W. H. BOESE, M.D.

Assistant Pathologist, Lebanon Hospital; Assistant Physician, University and Bellevue Clinic

NEW YORK

The following case is reported on account of the unusually large circumscribed development of inflammatory tissue, resembling a new growth. Although such a formation has been seen in chronic inflammation of the Fallopian tube, in the appendix it has not been reported to my knowledge.

History.—Miss D., aged 47, was admitted to the surgical service of Dr. Henry Roth at Lebanon Hospital June 2, 1907. About one year before admission to the hospital she had an attack of acute appendicitis. Soon after this attack subsided she noticed a mass in the right lower quadrant of her abdomen. This gradually increased in size. She lost 20 pounds in weight in one year. Examination revealed a tumor occupying the entire lower right quadrant of the abdomen, extending up to the level of the umbilicus and about one or two inches beyond the median line.

Operation.—This was performed by Dr. Henry Roth on June 3, 1907. On opening the peritoneal cavity a large mass presented itself with a shining, yellowish-brown surface and cystic to semisolid consistency. Its upper surface was attached to a broad band of omentum. There was an adhesion to the rectum. The tumor was intimately attached to the caput coli at the point corresponding to the base of the appendix. The mass was freed from the cecum and removed. In doing this there was an escape of very foul-smelling pus from the tumor through an opening at the point of its attachment to the cecum. The cecum did not show any evidence of involvement and, with the exception of denuded serosa and a small opening at the junction of the longitudinal bands, was normal in appearance. There was no evidence of any other growths or enlargements in other parts of the abdomen or body.

The patient died six days later, within a few hours after onset of symptoms of peritonitis, probably owing to failure of suture line in the cecum. Unfortunately a necropsy was not allowed.

Pathologic Report.—The tumor mass was oval, 19 cm. long, 11.5 cm. broad and 5 cm. thick. In the upper part, where it was attached to the cecum, and connecting with the lumen of the cecum by an opening about 0.5 cm. in diameter, was an oval abscess cavity about 6 cm. by 8 cm. by 4 cm. This cavity was filled with thick, yellowish pus, with a very offensive odor. Below the abscess cavity the tumor was one smooth, firm mass.

Sections were taken from four different locations. Dr. James Ewing of Cornell University was kind enough to go over the data and specimens with me. The following is his report of the more detailed findings:

"Sections from four portions of the tumor show that the growth is composed of fat tissue in various stages of edema and degeneration, a great many dilated veins, many large arteries and arterioles, many very cellular capillaries, considerable new connective tissue containing lymphocytes, lymph nodules, and plasma cells, and in certain areas diffuse infiltration with polynuclear leukocytes with some fibrin. There are also some outlying lobules of normal fat. None of the fat tissue shows any evidence of a tumor process, but rather of edema, mucoid degeneration, and invasion with an excessive number of small cellular blood vessels.

"In some areas about the numerous veins are broad sheaths of spindle cells with nuclei rich in chromatin. These show some of the features of a spindle-cell sarcoma, but are more satisfactorily explained as the result of chronic productive inflammation. Likewise, there are areas in which the small vessels and capillaries are so numerous as to suggest an angiosarcoma, but these appearances are probably the result of unusual cell multiplication in old granulation tissue. The typical structure of lipoma or liposarcoma is entirely wanting. The presence of diffuse suppurative inflammation in one large area, of much new inflammatory connective tissue, and of many lymphocytes, lymph nodules and plasma cells with granulation tissue, shows that the entire process is inflammatory and offers an explanation of the structures simulating a neoplasm.

"Therefore, the diagnosis may be given of chronic appendicitis and inflammation of the mesentery, with tumor like growth of inflammatory tissue."

527 West One Hundred and Forty-Third Street.

Dyspnea in Pleurisy.—Dyspnea is a very characteristic symptom of pleurisy. It is most urgent in those cases in which the exudation occurs most rapidly and it is astonishing the amount of fluid which a pleural cavity may contain without causing much distress of breathing, provided that it takes place gradually. There must, however, be some other explanation than the mere slowness of the exudation, as there are cases in which, even in spite of rapid effusion, the breathing remains unembarrassed. These cases give less anxiety, as the presence of urgent dyspnea is always a grave indication. —F. de H. Hall, in the *Practitioner*.

Therapeutics

HYPERTHYROIDISM (GRAVES' THYROID DISEASE)

When a child grows tall very rapidly, especially about the age of puberty, the thyroid is at least very active, or actually hypersecreting. The bone formation is rapid, and the epiphyses unite with the long bones at an earlier age than in children who grow more slowly. A young girl who has too much thyroid secretion is likely to have profuse or too frequent menstruation.

In not a few instances, during acute disease in which the heart becomes very rapid, the cause is not the disease, but the disturbance of the thyroid, or a mild thyroiditis, that is present.

In 1835, Graves, of Dublin, first described the disease with which his name is often connected. In 1840, Basedow, of Germany, again described the same affection. The most-used name of the disease, "exophthalmic goiter," is a misnomer and should be discontinued, as we may have this disease without exophthalmos, and exophthalmos may occur without other symptoms of this disease One of the two names at the head of this article is preferable, although proper names are objectionable for many reasons.

The greater the blood-supply and the greater the amount of simple hypertrophy, the nearer comes the thyroid gland to the condition [illegible] The greater the amount of colloid [illegible]ation of cysts, the nearer is the gland to what is known as ordinary goiter. The greater the amount of connective tissue and fibrous tissue development, the nearer comes the gland to undersecreting, sufficiently to cause myxedema.

In a beginning simple goiter, small doses of iodin may be of benefit, and iodin may be of benefit in the first stage of an exophthalmic goiter, the thyroid gland enlarging because it is short of iodin. In such conditions, the administration of small doses of iodin are of benefit, and a large thyroid, under such treatment, will often become smaller and the early symptoms of Graves' disease be inhibited. Such a gland, however, may be exceedingly susceptible to iodin, and a little iodin may precipitate all the Graves' symptoms. Or, the patient and the thyroid may stand small doses of iodin, while large doses would positively do harm, and are almost invariably inadvisable, as tending, sooner or later, to add the iodin cachexia to the thyroid disturbance. The iodin administered for this purpose is preferably in the form of an iodid, and perhaps best the sodium iodid. From 0.05 or 0.10 gm. (from 1 to 1½ grains) given from one to three times a day, is sufficient for saturating the thyroid with iodin and exciting its normal activity. Iodin has been used as an ointment, rubbed into the neck in the thyroid gland region. This, however, is generally inadvisable. The amount that will be absorbed is uncertain. Iodoform, in susceptible patients, placed on some absorbing surface, may cause iodin poisoning and symptoms of hyperthyroidism.

If during the administration of either iodin or thyroid symptoms of hypersecretion of the gland develop, the treatment is pernicious and should be immediately stopped. In fact, in any enlargement of the thyroid the administration of thyroid substance should be tried with great care lest the gland be stimulated to the condition of Graves' disease.

There is no justification for giving large doses of thyroid extract to a patient with a goiter with the expectation of diminishing it in size. It may be thus reduced in size, but the symptoms caused by such thyroid feeding should prohibit its use to that extent. The injection of iodin into goiters is not justifiable, and the attempt to diminish the size of the goiter with *x*-ray treatment is of questionable value. While the gland may be thus reduced in size, the skin is caused to become adherent to the underlying tissues, and any future necessary operation becomes much more serious than when the *x*-rays have not been used.

When any treatment is undertaken to diminish the size of the thyroid, its frequent variations in size without any treatment must be taken into consideration before deciding that such treatment was beneficial.

With these preliminary considerations we are better prepared to study "exophthalmic goiter." Its causes are any of the stimulants of the thyroid gland which have been named as stimulants in the previous article. It is suggested that in some instances exophthalmic goiter has followed some previous general infection, the gland having been first stimulated by such infection and then has continued its activity. Such a cause is probably rare, as sclerosis and subsecretion of the gland are much more likely to follow such irritation. The disease occurs four times as frequently in women as in men and most frequently between the ages of 20 and 40.

SYMPTOMATOLOGY

This disease or condition is well studied by dividing it into four periods: first, the prethyroid period; second, that of incipient symptoms; third, the period when the symptoms are all actively present, the stage of exacerbation; and fourth, when the symptoms of the disease tend to decrease, or the stage of defervescence. While deaths do occur from the disease itself during its exacerbation, it is probably rare. Death, however, often occurs during hyperthyroidism from some intercurrent affection or necessary operation, or from an operation that unfortunately must be done on account of serious symptoms, but has been deferred too long.

1. Rapid development of hyperthyroidism is doubtful, although it has long been stated that it may develop rapidly after some mental shock. Almost invariably careful questioning will show that there were plenty of signs present of hypersecretion of the thyroid. Highly neurotic patients, especially women with uterine irritations, as caused by inflammation or displacements are liable to the development of this disease. Recurrences of tremblings, palpitations, sleeplessness, vasomotor disturbances, and inexcusable loss of weight are signs that this gland could readily become so stimulated as to produce the picture of hyperthyroidism. Any of these conditions may be but short-lived, but if frequently repeated, they show a tendency to hyperactivity of this gland.

2. The actual symptoms of a developing Graves' disease are, primarily, an increased rapidity of the heart, some enlargement of the thyroid, and nervous irritability. These symptoms the patients often themselves note, perhaps not the enlargement of the thyroid, but questioning will often disclose the fact that they do not like collars or laces tight around the throat.

If in doubt as to whether these symptoms (especially if the thyroid apparently is not enlarged) are due to hypersecretion of the gland and are symptoms of beginning Graves' disease, the administration of a thyroid tablet (3 grains) once a day, will in five days at least, clear up the diagnosis. If the patient has increased thyroid secretion, every symptom will be greatly intensified. If these symptoms are not intensified, the patient is not beginning an exophthalmic goiter.

3. The three prominent symptoms of an established Graves' disease are exophthalmos, enlarged thyroid, and palpitation of the heart. The most constant of these three symptoms is palpitation, and the next most constant is enlargement of the thyroid. The exophthalmos is frequently absent, and often is present in but slight degree. Exophthalmos may be present with an enlarged thyroid without palpitation. This combination, however, is infrequent, and the gland is not really hypersecreting. Rarely but one eye is affected. The forward projection of the eye-ball is probably due to dilated blood-vessels at the back of the orbit, as the exophthalmos disappears after death. The thyroid may be enlarged as a whole, but often only half of it is enlarged, and it varies in size from time to time, causing varying sensations of pressure. Part of the gland may increase its colloid material and even show cystic degeneration while the rest of the gland may continue to hypersecrete.

Palpitation is almost always present more or less persistently, lasting sometimes for weeks, and under the same conditions at the same rate. In other words, a patient who has a palpitation of 130 in the office during examination of the heart may be found for weeks, under the same conditions, with the same frequency of heart rate. No other disease or condition will allow a patient to walk around and attend to his or her business, eat, drink, sleep, and even be merry, with a heart-beat of from 120 to 140, and not recognize that he or she is suffering from palpitation. Any other cause for such a rapid heart will always cause dyspnea, more or less cardiac distress and actual disability. Sometimes the pulse is irregular, rarely intermittent. Often it is a pretty good pulse, even at the rapid rate. The heart is generally hypertrophied, especially the right ventricle, and later in the disease it may become dilated. There may be insufficiency of the valves on account of cardiac enlargement, but there is no valvular lesion. The future danger to the heart is that of a myocarditis. The arterial pressure is often low, but may be normal, and it is occasionally higher than normal. One of the serious dangers in the radical cure, *i. e.*, by operation, of this disease is that the operation is not done until myocardial weakness has developed. The carotid arteries pulsate to the point of throbbing and the thyroid arteries are dilated and also throb. This pulsation in the neck is exceedingly annoying to some of these patients. Aneurysms of the thyroid arteries often occur, giving all sorts of roarings and murmurs in and around the region of the gland.

The fourth most frequent symptom of Graves' disease is tremor. It is almost constantly present, may be of the hands alone, often of the tongue, and it may even be difficult for the patient to hold the head still, especially when being examined.

Other symptoms that may be present are a cough, due to the pressure of the thyroid and due to large blood-vessels in the throat, especially in the lingual tonsil region. These pressures and dilatations cause tickling. Diarrheas may occur, and sometimes nausea and vomiting; often severe headaches and insomnia are symptoms. There are vasomotor ataxias, such as hot flashes and then a feeling of coldness, and one may feel the patient's hands or face at one time cold, or hot, and in four or five minutes they feel the opposite.

Another important symptom of the disease is loss of weight, which is almost constant and has often progressed considerably before the patient comes to the physician; but there is always a limit to this loss of weight, as it does not seem to be continually progressive.

Early in the history of the disease the patient often sweats readily; sometimes has dripping perspirations. This, however, is by no means constant, and is probably due to the vasomotor disturbance. Leg and muscle weaknesses, and sometimes edema of the feet and ankles occur. This is entirely due to a weakened circulation. There may be polyuria, and sometimes an albuminuria, which perhaps represents passive congestion of the kidneys from weakened heart, and occasionally there is glycosuria.

The eye symptoms are characteristic, and the different signs are known by the names of the men who first called attention to them. Names are confusing, and it is unnecessary to quote them. The characteristic signs of the exophthalmic eye are (1) the inability of the upper eyelid to follow the eye-ball on looking down; (2) the unusual amount of sclera disclosed above the cornea caused by retraction of the upper lid when the patient is looking forward; (3) the difficulty or actual inability of the patient to hold the eye in a position of convergence. There may also be involuntary winking and tremor of the eye-ball. There may be, from the pressure, an obstruction of the mouths of the tear-ducts, and the tears may flow down the cheek, although the eyes may become dry.

The skin is generally thin, soft, and moist, and as the blood-vessels of the surface are more or less dilated, perspiration is generally easily caused by the least nervous excitement. There is more or less diminished electrical resistance of the skin, which is perhaps due to the overfilled blood-vessels on the one hand, and to the increased central nervous excitability on the other. Pigmentations of the skin are found on different parts of the body and not infrequently on the eyelids. Sometimes there is falling of the hair, or it may become prematurely gray. There may be browning of the skin, not dissimilar to what is seen in pernicious anemia or in Addison's disease, or there may be vitiligo. There may be all kinds of eye, ear, and head symptoms.

4. The duration of the disease may be from two to ten years or more. If the disease is to end in death, the complications which bring this about are most frequently myocarditis, diabetes, or a progressive muscular debility and neurasthenia. A pernicious anemia may also be a final outcome. Severe nervous complications may develop, but are rare, such as melancholia, mania, or chorea. If active thyroid disturbance has continued for more than five years, the chances of complete recovery are small, as serious complications have generally occurred. Those patients who recover generally do so in from two to three years by a general amelioration of the symptoms, with a tendency, as previously stated, some years later, to a sub-secretion of the thyroid and partial myxedema.

The majority of patients with this disease, properly treated, will certainly recover, and the better understanding of the treatment and the curative value of early operation as now understood, will probably produce 75 per cent. of recoveries. If left alone, probably not more than a small percentage of patients die of the intensity of the disease itself, but most patients die from complications.

PROGNOSIS

It is impossible to estimate the probable duration of the disease in a given instance. If there is a family tendency to neuroses, or if the patient has shown symptoms long previously of neurotic temperament, the recovery will be slow. If the onset of the disease was rather rapid the recovery will probably be more rapid. The older the individual with exophthalmic goiter, generally, the sooner may recovery be expected. Younger patients who recover from the disease are likely to have recurrences. Most patients may be greatly improved even without operation; quite a percentage can be cured without operation; a certain percentage can never be cured without operation. The constantly better prognosis from operation when done early in the disease should cause physicians not to allow a prolonged tachycardia from Graves' thyroid disease to persist, as a heart muscle may become permanently damaged, and then the prognosis of an operation is serious. Also, great loss of weight should not be allowed before an operation is advised. The danger of permanent invalidism and diabetes should always be remembered and a patient should not be allowed to suffer with the disease for years without operative interference having been early suggested and urged.

TREATMENT

First, when the disease is not positively in evidence, but suspected, a small dose of thyroid, as above suggested, should be given daily for a few days or a week, not more than 0.20 gm. (3 grains) of the official thyroid powder once a day. If the symptoms are aggravated, the thyroid is hypersecreting and the patient is in danger of Graves' disease. The treatment at this time, after the diagnosis has been made, is not dissimilar (except that bed rest is not urged) from the treatment of the actual disease.

Meat, coffee, tea, and alcohol should be entirely cut out of the diet. Sexual excitement should not be allowed. Any uterine disturbance should be investigated and corrected, if possible. Some simple iron preparation should be administered, and the elixir of the glycerophosphates of lime and soda is indicated, especially as it has been shown that when there is exophthalmic goiter there is increased elimination of calcium in the urine, also, the lime salts seem to act as a sedative to the thyroid gland. If a patient is well-nourished and in good physical and blood condition the bromids may be given for a time, but should not be long continued, and generally are contra-indicated by the debility and weakness. Most patients, especially when meat is stopped, should receive a small dose of iron each day. On this treatment the majority of these patients will recover, although they may have relapses.

If the thyroid is distinctly enlarged and a few of the symptoms of Graves' disease are present, small doses of iodid may stimulate the gland to more normal activity so that it will not secrete abnormally. This may be tried when active symptoms of Graves' disease are not present. If they are present the iodid will generally make the symptoms worse, as does thyroid feeding.

If the disease is actually present and with all the classic symptoms, the most important symptom is the rapid heart action. Anything that will reduce a pulse of 130, 140 and even more to 100 or 110 is of benefit. Such a patient must be put to bed, and must stay there for the period necessary to quiet the heart. The diet should be that above outlined. Such laxatives as necessary should be given, and daily massage should be done. The glycerophosphates of lime and soda should be tried, and if these do not quiet the heart or the symptoms of hypersecretion, perhaps the best treatment is the hydrobromid of quinin, given in 0.30 gram (5 grain) doses, three times a day. It may at first cause a little cinchonism, but soon this is not noted, and it seems sometimes to have specific action on the thyroid, and much better action than the sulphate of quinin. Rarely in such severe cases should bromids be given, as they will add to the debility that is present and coming. Atropin in any form is generally of little value, and sometimes seems to excite the nervous system, if in doses sufficient to show its action. Suprarenal substance or extract is of no value. Thymus gland substance has often seemed to cause some improvement, and at other times has absolutely failed. Opium in any form (morphin, codein, or other alkaloid) will always diminish the thyroid secretion, but the future is bad, and such administration is rarely justifiable.

Digitalis is of no value in reducing the frequency of the heart beat when it is stimulated by thyroid secretion. The patient may be poisoned with digitalis and the heart not slowed at all. Strophanthus may be given if the heart is weak, but it will not slow it. Strychnin is generally contra-indicated on account of increasing the nervous irritability. The heart must be quieted with calcium preparations and mental and physical rest, which can best be obtained in a hospital or sanatorium.

Ergot (and it must be a good ergot, a sealed bottle of a pure fluid extract) in a dose of half a teaspoonful given in water, three times a day after meals, may be of benefit in quieting the heart and contracting the peripheral blood-vessels, and should be tried.

Any active electrical treatments of the thyroid, as faradization, galvanization, cataphoresis, or any local counterirritant action, or the rubbing in of ointments are almost invariably of no avail, and often do more harm than good. In fact, the less the gland is manipulated the better.

The application of the *x*-ray to a gland has been declared by some skilled operators to be of value. It has been tried frequently without success, however, and it is certainly inadvisable if a future operation is contemplated. It injures the skin, makes the skin adherent to the gland and tissues below, and may interfere with perfect healing. In other words, it does not present a good surgical field.

When the Roentgen ray treatment is successful, it has been noted that the gland diminishes in size, and therefore its secretion is probably diminished and the tachycardia is lessened.

The milk from thyroidectomized goats has been administered with good results: also various serum preparations prepared from animals that have been thyroidectomized have at times seemed to furnish an antidote to the hypersecretion of the thyroid, but such treatments, though logical, have not been attended with more than occasional success. An antithyroidin has been presented, which is prepared from the serum of thyroidectomized sheep, the dose of which is 4 grams, (1 drachm) three times a day. Also a thyroidectin has been put on the market, prepared from the same source, put up in capsules, the dose of which is one or two, three times a day. Any of these treatments should be continued for from four to eight weeks, and then repeated at intervals of two or three months.

Beebe and Rogers, of New York, have used successfully an antithyroid serum prepared by them from the serum of Belgian hares after they have injected the animals with serum obtained from exophthalmic goiter thyroids. The serum so prepared has seemed to act as an antitoxin. If the patient develops an immunity or does not any longer improve with the serum from this animal, they use a serum prepared from some other animal. Injections are given every forty-eight hours. The shorter time the disease has been in existence, the greater the success of the treatment. Lately, Dr. S. P. Beebe, of New York, has stated his belief that extracts of human thyroids, carefully prepared and administered hypodermatically, are by far the best for the human subject. By careful analysis he has come to the conclusion that any portion of the prepared protein that contains about 0.0034 of iodin represents 1 gram of the active protein. He prepares tablets of different strengths representing 1, 2, and 5 per cent. He understands that a 1 per cent. tablet means that 1 per cent. of the dried weight of the tablet is made up of the purified thyroid protein. For hypodermic use he makes various strengths standardized on the iodin basis, put up in sealed glass tubes.

From the degenerations that take place in the thyroid glands of patients with Graves' disease, and from the disturbance that this disease causes in other parts of the body, and also taking into consideration the question of whether the gland disturbance is the primary cause of Graves' disease, the number of successes from such serum injections must be limited. Also, the difficulty of obtaining a sufficient amount of this serum, which must be prepared from the removed exophthalmic goiter glands, must allow but a small portion of patients with Graves' disease to be so treated.

Consequently, when any patient with exophthalmic goiter does not quickly improve with the medicinal treatment above suggested or with the antithyroid treatments that may be readily applied, resort should be had to surgery, and partial thyroidectomy is indicated. Such an operation is indicated if three or four months of medical treatment has not caused marked amelioration of the symptoms; if the exophthalmos is likely to injure the sight; if there is great loss of weight and strength; if the tachycardia persists; and if there is any serious pressure on the esophagus, trachea, or nerves. Such operations are successful in removing the symptoms of the disease. Contra-indications to operation are, as above stated, a weak heart muscle as shown by an irregular and wavering tension pulse; edemas that would show lack of cardiac compensation would also contra-indicate operation. Frequent attacks of diarrhea should postpone such an operation.

The substitute operation of ligating one or more of the enlarged thyroid vessels may ameliorate some of the symptoms, but such ligations are often only temporary in their benefit. The danger of pressing too much thyroid substance into the circulation during ligation is almost as great as during the operation for partial excision.

The *prognosis* is much better in early operation in Graves' disease than later, on account of the liability of the whole gland to become disturbed in its function, and the probability that other ductless glands are consequently disturbed in their functions, perhaps permanently. It seems to be a fact that different parts of the thyroid may be functioning differently although the complementary secretion may be nearly normal. Consequently, if it is possible to determine the portion of the gland that is especially diseased, it should be that portion which is removed. Sometimes the healthy portion of the gland has been removed and the diseased portion left, and death has occurred on this account. The removal of one lobe of the gland, the most diseased portion, with perhaps the isthmus is generally a sufficient operation. Of course as many parathyroid glands as possible should be left. It is rare, and then perhaps only when there is carcinomatous degeneration, that the whole thyroid should be removed. If it is necessary to remove the whole gland, and consequently perhaps most of the parathyroid glands, parathyroid substance or extract, or some calcium salt at least, should be administered for some time to prevent convulsive symptoms from such extirpation. Later, thyroid feeding would prevent myxedema.

Dr. C. H. Mayo, Rochester, Minn. (*Ohio State Med. Jour.*, October, 1907) believes that ether is the best anesthetic to use, and half an hour before the ether is begun gives a hypodermatic injection of 1/6 of a grain of morphin, and 1/120 of a grain of atropin. The morphin prevents the necessity of much ether and the atropin prevents the profuse mucus secretion. He places the patient in the reverse Trendelenburg posture which tends by gravity to relieve the upper part of the body of blood. He leaves the posterior capsule of the gland undamaged and thus preserves the parathyroids. Of course the recurrent laryngeal nerve is looked for and protected. He washes the wounded area with Harrington's solution (alcohol 640 parts, water 300 parts, hydrochloric acid 60 parts, bichlorid of mercury 8 parts). This prevents lymphatic absorption. The patients after the operation are given large saline enemas. If they do not retain these, they are given saline solution subcutaneously. This treatment he repeats several times during the first thirty-six hours If the patients sweat profusely he gives atropin. If they are very restless he gives morphin. Most patient are not confined to bed more than three days.

Dr. T. P. Dunhill (*Brit. Med. Jour.*, May 22, 1909 believes that local anesthesia governs the whole questio as to the safety or danger of the operation from exopl thalmic goiter. He does not believe that general anesth sia can be recommended as safe, while local anesthe may be recommended as perfectly safe, unless patient is moribund.

Drs. Max Ballin and J. W. Vaughan, of Detroit (*Jour. Michigan Med. Society*, April, 1910) come to following conclusions as to the final results of thy ectomy in Graves' disease:

First: Early operation before secondary heart eye changes have occurred practically assures a c the victim of exophthalmic goiter. They wo operate during the height of an exacerbation of ease, but after absolute bed rest in which the symptoms have quieted down, what might be t interval operation.

Second: In no case in which the symptoms have be present for a period of over five years and in which p manent heart changes and eye changes have occurr can a positive recovery be promised, although the c dition may be much improved. These are the danger cases for operation, and each must be studied treated according to the symptoms.

The Medical Profession in Norway.—Recent statisti that there are now 1,161 registered physicians in Norw eighty-eight residing in foreign lands, sixty-four being United States. The average in all Norway is one p to 2,007 inhabitants, but in Christiania there is on cian to 850 inhabitants. The age of 66.3 per cent. is 30 and 50: only 5.3 per cent. are between 25 and 30. 3.1 per cent. over 70. Editorial comment on these f the *Norsk Magazin for Laegevidenskaben* calls attention small number of physicians surviving past 50 and th proportion who are ready to practice before the age

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, DECEMBER 17, 1910

RECENT STUDIES ON TYPHUS FEVER

It will be recalled that Nicolle of Tunis, in Africa, recently succeeded in transmitting typhus fever to the macacus monkey, and that Anderson and Goldberger, working independently with the disease as it is found in Mexico City, were able to infect monkeys with blood taken from typhus patients. These results were further confirmed by the investigations of Ricketts and Wilder. Recently Gaviño and Girard[1] report the transmission of typhus to monkeys of an inferior species, namely, the *Ateles vellerosus,* indigenous to Mexico, by subcutaneous injections of blood from typhus patients. The animals, after an incubation period of eleven to fourteen days, succumb to prostration and a high fever. An exanthematic eruption, such as occurs almost constantly in man, is absent, but the thermal elevation and other symptoms are regarded as sufficiently characteristic to permit the diagnosis of typhus. Immunity is conferred by a single injection so that the monkeys after their recovery from the disease are fected by subsequent inoculations. Other animals, as the white rat, white mouse, rabbit, dog, pig and all proved insusceptible to typhus fever.

Mexican authors report also one experiment in ey seem to have obtained a protective vaccina- the inoculation of a monkey (*Ateles*) with l blood from a patient in the twelfth day of a attack of typhus fever. Four c.c. of the defi- d blood were sealed in a glass tube and heated for minutes at 55 C. The control animal received amount of unheated blood, and after an incu- riod of fourteen days passed through a charac- d severe attack of typhus fever. The monkey ved the heated blood showed a slight rise of e during the three days after the injection, suggested, to toxins liberated by the destruc- microorganisms in the heating. An immunity sisting of the injection of fresh typhus blood phus patient was given and no febrile reaction ppreciable malaise resulted, although the control sickened fifteen days after his injection of the same blood and died five days later. Unfortunately the experiment as yet stands alone, the scarcity of monkeys interrupting the investigation. We hope that further experiments may be made, as they promise results of practical value in the working out of a successful vaccination against typhus fever.

Gaviño and Girard also studied the blood of typhus patients. No cultivable germ was discovered, but the forms recently described by Ricketts and Wilder were found in the plasma. These structures in smears stained with Giemsa solution appear in three forms: (1) as bipolar bacilliform bodies, two microns long and one-half micron wide, with rounded ends, the poles staining a violet purple and the interpolar substance not at all, (2) similar bacilliform bodies in which a pale violet-staining mass is seen in the central part between the poles; (3) bodies measuring one and one-half microns in length formed of two spherical granules separated by a space in length twice the diameter of the granules, one granule colored a reddish purple with Giemsa, the other blue.[2]

Gaviño and Girard are of the opinion that the bodies represent products of nuclear disintegration and karyolysis rather than microbes. They base their conclusion on the study of smears from the spleen of one of their diseased monkeys in which they claim to find granules which in some instances show clearly the origin from the nuclei of the leukocytes and in others simulate closely the bodies seen in the blood plasma.

Since 1883, when Mott described diplococci in the blood of typhus patients, numerous microorganisms have been put forward as the specific cause of typhus. Among the more important of these are, a strepto-bacillus obtained by Hlava in 1888 on various culture media, a diplococcus described by Dubief and Bruehl, and a piroplasma seen in the blood by Gottschlich in Alexandria. All, with the exception of the last, were cultivated, but as these observations have not been confirmed, the consensus of scientific opinion seems to be that the problem of the causal agent of typhus still remains unsolved. The bodies described by Ricketts and Wilder cannot be cultivated. Their bipolar structure reminds one of the plague bacillus and this is of interest in view of the similarities between typhus fever and plague: both diseases are acute, self-limited, blood infections; both are associated with subcutaneous hemorrhages; both are apparently insect-borne. It has been shown that plague is carried from host to host by the flea and recent investigations point strongly to the louse as the transmitter of typhus fever. These and other theoretical reasons entitle the bodies in question to very careful consideration, and the results of further investigations are awaited with interest.

Gaviño and Girard. Pub d Inst Bact Nacional, Mexico, 1910

[2] Prieto describes other phases of the research in the Cronica Medica Mexicana, 1910, xiii, 314.

DIABETES

The important and practical group of communications on the subject of diabetes by Lusk, McLeod, Woodyatt, Pratt and Wallace, which appears in this issue, is worthy of special attention. The papers represent the principal lines along which the work on diabetes is being advanced. The surveys of the literature will be found to be critical, and the commentary to be based on new data which represent definite progress worthy of attention.

Lusk calls attention to the fact that in cases of the severest forms of diabetes mellitus or phlorhizin diabetes in which the glycogen deposits in the body have become exhausted, the sugar in the urine comes solely from protein, provided no starch or sugar is ingested. Under these circumstances the total urinary sugar comes to bear to the total urinary nitrogen a constant ratio, viz., 3.65 grams sugar to 1 gram nitrogen. This means that about 60 per cent. by weight, *i. e.*, the possible maximum, of the protein metabolized has been converted into sugar, all of which is then excreted. In another place Lusk has called this a "fatal ratio," as it indicates a complete loss of tolerance for sugar and a hopeless prognosis. Such a method of making a forecast is significant of what one day will be the rule in medicine. In attaching significance to such a ratio it is, of course, understood that the ratio must be found steadily on successive days, for in cases of no great severity a transient accidental ratio of about 3.65 to 1 may be encountered during a period in which a heavy discharge of sugar from liver glycogen is taking place into the blood. "The intensity of diabetes," says Lusk, "should not be determined by the percentage of sugar in the urine, but by the relationship between the ingo of sugar (or starch) plus the possible maximum of sugar production from protein, as compared with the total output of sugar," a relationship which when expressed in the form of an equation, as done by Falta, gives his "coefficient of excretion." By means of Falta's coefficient a total absence of sugar tolerance is designated as 100. Milder deficiencies of tolerance may be expressed by any whole number or fraction between 0 and 100, thus doing for diabetes what the sphygmomanometer does for arterial pressure, or the erythrocyte count and hemoglobin estimate do for the gauging of an anemia. This employment of figures for expressing the severity of a diabetes will result in a sharper definition or the gradual discarding of such terms as "mild," "moderately severe," "severe," etc., which are now so much employed and with different meanings in different localities. And yet there are those who still, in referring to diabetes, talk about "a 2 per cent. urine," and in other conditions, notably in pregnancy and Bright's disease, draw conclusions from the percentage of urea, with no regard for the total quantities excreted. There are others, too, who do indeed estimate the total quantity of sugar or of urea, especially the latter, and even of nitrogen and other substances, and then draw conclusions innocent of all knowledge concerning the total amount of protein and non-nitrogenous food which the individual has eaten and by which the amounts of the substances found in the urine are so markedly influenced. By feeding experiments in which he has employed certain simple components of the protein molecule, Lusk is in a position to state that the ability of protein to pass over into sugar is inherent in certain of the component amino-acids and is not due to preformed sugar in the protein molecule.

Woodyatt, working with certain simple sugars, some of which may be regarded as the components of the glucose molecule, brings experimental evidence to show that in the course of the utilization of sugar in the body a cleavage of glucose into two molecules of triose is an important event. He also shows a suggestive parallelism between certain oxidations of sugars which can be performed in the laboratory and those oxidations of sugar in the body which have to do with the checking of acidosis—the chemistry of the latter process receiving therein its first specific consideration.

In keeping with a modern tendency to reexamine some of the teachings concerning diabetes which have been regarded as fixed, McLeod's detailed study of the mechanism of the form of diabetes produced by irritation of certain parts of the nervous system is able and highly suggestive. In Claude Bernard's puncture of the floor of the fourth ventricle McLeod sees a stimulation at the center of a reflex arc, the efferent limb of which runs in the splanchnics and whose effect is to lessen the power of the liver cell to hold its glycogen, *i. e.*, to lessen the inhibition which normally keeps glycogenolysis (or the conversion of glycogen into sugar by the action of glycogenase) within its normal limits. He believes that the asphyxia glycosurias and certain of those caused by organ extracts are ultimately of the same mechanism as the form caused by splanchnic stimulation. Epinephrin glycosuria he is inclined to regard as part and parcel of the well-known action of epinephrin on the sympathetic autonomic nervous system. So in the case of thyroid glycosuria and other experimental forms McLeod registers a protest against a too general tendency to interpret the effect in terms of pancreas inhibition. Even in diabetes mellitus he suggests that a deranged glycogenic function of the liver may contribute to the picture in some degree. In this connection it is interesting to note that Wallace in dogs made diabetic by total pancreas extirpation—a condition which soon clears the liver of glycogen—sees no effect from the use of atropin, whereas Rudisch and some others find by its use an amelioration of glycosuria in diabetes mellitus. Fluctuations in glycosuria caused by such drugs as atropin and opium are greatest in cases in which the liver still holds glycogen.

Pratt's work on the sugar tolerance of dogs before and after ligation of the pancreatic ducts leads him to believe that ligation of the ducts, if thoroughly done, will result in some loss of tolerance for sugar, if not in real diabetes, contrary to a general belief. After such ligations he fails in some instances to find in the atrophic pancreas rest any Langerhans tissue, but only connective tissue and remnants of acinus cells and duct epithelium. He concludes, from this and other considerations, that the production of an antidiabetic principle is not confined to island tissue. The problem is technically beset with many difficulties. Wallace reiterates what so many have found to be true and what is nevertheless so doggedly disregarded by hundreds of physicians, that save in certain special situations or emergencies there is no drug that is effectively employed in the treatment of diabetes mellitus.

THE SOCIAL AND LEGAL VALUE OF VITAL STATISTICS

Physicians, individually and as a class, have long realized the value of trustworthy vital statistics as a basis of knowledge regarding diseases. Owing to their efforts in urging the passage of vital registration laws, the general public, members of legislatures and even physicians themselves, have largely lost sight of the non-medical value of vital statistics. The passage of such laws has come to be regarded as a favor to physicians and as a matter in which the general public has little, if any, concern. Yet the recording of births and marriages is of no advantage to physicians as such; they are interested in vital statistics only as these contribute to sociologic knowledge. The registration of deaths is useful to the medical profession only in affording information regarding the frequency and mortality of disease. Hence the interest of the medical profession in vital statistics legislation is, at most, entirely impersonal and altruistic.

The subject, however, should be of the greatest interest to all citizens, because it is important that every individual should be able, if necessary, to produce legal evidence of his birth and parentage. It is important that records should be made of the time, place, manner and cause of death of every human being. Registration of vital facts is of the greatest value in determining questions involving parentage, legitimacy, inheritance, property rights, marriage and divorce—in fact, in most of the social or business relations of life. The value of proper registration of these essential facts has long been recognized by all civilized nations except our own. The utter neglect of vital registration by many of our states is a constant source of astonishment to visitors from other countries. In this connection, an article by Deacon,[1] the statistician of the Kansas State Board of Health, is worthy of comment. Our neglect of such fundamental and truly vital matters can be accounted for only by the comparative newness of our social organization. Each state, as it becomes older, and as social relations become more complicated, will find it necessary to provide some effective means for registering essential facts regarding its citizens. It is particularly strange that, in the southern states, where the possibility of racial admixture is greatest, and where even a suspicion of tainted ancestry carries with it the gravest social consequences, there has been little effort to make or to preserve legal records of birth. The reason for this neglect must surely be that the legal and social importance of vital statistics registration has never been properly brought to the attention of the public leaders in the South, for certainly when it is appreciated, these states will not delay the adoption and enforcement of appropriate laws on this subject. It is not conducive to national pride to know that such countries as New South Wales, Tasmania, New Zealand, Ceylon, Jamaica, Finland, Roumania, Bulgaria, Japan and Chili are far ahead of the United States in the proper registration and preservation of records on vital matters. Still less gratifying to our self-satisfaction is Mr. Deacon's statement that the United States in this particular must be classed with Africa and Borneo.

THE PREVENTION OF INFANT MORTALITY

The deliberations of the American Association for the Study and Prevention of Infant Mortality, the first annual session of which was recently held, culminated in a series of five resolutions, which, though different in subject, are all in harmony with the aims of the association.

The first of these resolutions deals with the establishment of a national department of health, and shows a broad conception of the essentials of the movement for the prevention of infant mortality. Concerning this particular resolution, a report of the meeting[1] says that Prof. Irving Fisher described the sinister commercial influences that are hypocritically hampering the establishment of a national health department under the pretense of safeguarding "medical freedom," and showed how such a branch of the federal government might become a supremely efficient instrument in the promotion of all those matters of public hygiene and legal enactment on which the reduction of infant mortality depends. The association went on record as "endorsing the movement for a national department of health, in the belief that the establishment of such a department will lead to great reduction in infant mortality, *not only through* improved regulation of interstate commerce in milk, infant foods, and medicines; *but also through* wider dissemination of information on the causes of infant mortality and their prevention."

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[1] Deacon, W. J. B.: Vital Statistics in Relation to Public Welfare, Jour. Kansas Med. Soc., November, 1910; abstr. in this issue of THE JOURNAL, p. 2172.

[1] Bruère, R. W.: Saving the Babies, Survey, Nov. 26, 1910, p. 317. A report of the meeting is now running in THE JOURNAL, in the Department of Society Proceedings.

The report of the committee on birth registration, by Dr. Cressy L. Wilbur of the Bureau of the Census, inspired a resolution endorsing the model law of the American Medical Association for the registration of births and deaths. This precipitated, incidentally, an interesting discussion, led by Dr. W. H. Welch, on the midwife question, which resulted in the appointment of a committee to formulate a definite policy on this subject.

The third resolution urged on the Secretary of Agriculture the establishment of official standards for milk "branded as certified, inspected or pasteurized" and the enforcement of such standards in interstate commerce.

The remaining resolutions related to instruction of pupils and teachers in elementary hygiene, sanitation and biology in the public and normal schools and in colleges, and the need of safeguarding mothers from industrial and economic pressure and of instructing them in the principles of healthy parenthood and infant hygiene.

This is an ambitious program, but it touches the vital points in the prevention of infant mortality.

Current Comment

READY-MADE MIXTURES

There is little doubt that the tendency in some quarters to underestimate the value of drugs in the treatment of disease is due to the unscientific way in which drugs have been used rather than to the lack of efficacy of the drugs themselves. No reliable conclusions can be deduced regarding the use of drugs unless the administrators of such drugs know the exact amounts that have been used; in other words, accuracy of dosage is essential to scientific therapeutics. In the Pharmacology Department of this issue, one of the reasons for unscientific prescribing is made clear. There are on the market tablets containing bismuth, opium and phenol in varying (alleged) proportions. Whether these tablets were originally made by the various manufacturing pharmaceutical houses in response to a demand by physicians or, as is more likely, were put out by an enterprising firm to catch the physician's fancy makes little difference. The point is, such tablets are on the market, made by a number of large and reputable concerns, and the supposition is that the tablets are prescribed where definite amounts of bismuth, opium and phenol are indicated. Yet careful investigation extending over two years, made in the Association laboratory, proves beyond question that so far as the phenol-content of these tablets is concerned, the dosage is absolutely unreliable. Whether this unreliability is due to the technical difficulties of making such tablets, to the lack of care, or even to actual dishonesty on the part of the manufacturers, may be open to discussion, but it is indisputable that such tablets cannot be scientifically prescribed. Not only should physicians cease prescribing such products, but self-respecting pharmaceutical houses should cease manufacturing them or else should acknowledge openly that the formula on the label does not represent the actual composition of the product.

ENDOWMENTS FOR MEDICAL EDUCATION

A few years ago President Eliot aptly stated that "the way to get endowment for medicine was to improve medical education." So the best policy for medical colleges to pursue is not to wait, Micawber-like, for something to turn up, but to find out what they need and then to go after it. In some instances this may require, before starting the campaign for ample financial support, an energetic house-cleaning and the making of mergers or other changes so that the college will deserve endowment. That this is a wise policy has been repeatedly shown. The faculty of Drake University College of Medicine voted to close the school unless money enough was forthcoming to conduct the college in accordance with modern standards. As a result $150,000 was raised in a few weeks' time. In Colorado there were two medical colleges, one of which, being in a small city, lacked ample clinical facilities and the other, owing to insufficient finances, lacked ample laboratory equipment. It was decided to merge the two schools so that the strong points of one could be made to supplement those of the other. This was done with the result that one strong college remained in Colorado with a unified medical profession back of it. A later instance is at Western Reserve University, Cleveland. Last June the trustees determined to raise a million dollars to endow the medical department, and then set about to get it. It is now reported that nearly $700,000 has been raised. There are numerous localities where such successes may be duplicated if the right steps are taken. The local college or colleges, however, must take the initiative and make all the improvements possible before seeking help elsewhere. The college should first show itself capable of the proper use of funds entrusted to it and then the funds will be forthcoming.

NEW VIEWS ON WOUND-HEALING

While the more ambitious dreams of the surgeons of the pre-Listerian era in regard to wound-healing have been fulfilled, according to Carrel's article in this issue, we have no right to believe that the treatment of wounds has reached its ultimate perfection. We content ourselves as yet with securing a degree of asepsis, and leave to Nature the healing of the wound and the care of cicatrization. Carrel believes that we may be able to go farther than this and to activate the processes of repair, so that wounds which, under our best present methods, heal in a few days, may heal in a few hours; that the development of methods for the stimulation of the growth of epithelial cells, for the inhibition or activation of connective-tissue proliferation and the artificial production of osteogenesis would greatly improve the therapeutics of ulcerations of the skin, and of lesions of the peripheral nerves, the bones and many other tissues. With a view to the development of this new principle of surgery, Carrel has undertaken some animal experimental studies to ascertain the laws of the redintegration of tissues. It is a custom of florists to use chemicals for the activation or "forcing" of the growth and maturation of flowers, aside from the use of the ordinary fertilizers, heat, etc. Analogous processes may be invoked in the growth and repair of tissues. Carrel's first article concerns regeneration and cicatrization of surface wounds, and he deduces from his studies certain preliminary principles which are of interest, and which indicate results of the highest importance in wound-healing.

TYPHOID FEVER AND BUSINESS

Sometimes the connection between excessive typhoid fever and the commercial welfare of a town stands out so clearly that the most reluctant observer must grant its existence. This seems to be the case in Rutland, Vermont, where typhoid epidemics in 1909 and 1910 have been attributed to the water-supply. Financial retribution has followed at once. The managers of conventions scheduled to meet in Rutland have changed their intentions and the conventions have met in other places; a wealthy New Yorker who had purchased land and planned a costly residence in Rutland writes to the local paper that he cannot carry out his plan unless protection of the water-supply is assured; there is now talk of damage suits against the city by typhoid victims. Altogether the financial aspect of a polluted water-supply has become very prominent. The Rutland *News* is driven to remark that "there is no question that Rutland has suffered grievously in a business way during the past two years as a result of these annual visitations of typhoid. It is simply good common business sense that the source of the epidemic be eliminated. Commercial prudence, if nothing more, requires it." The experience of Rutland may serve to remind city officials, who deny the existence of danger from a sewage-polluted water-supply on the ground that other sources of typhoid fever exist in the community, that water-borne typhoid may be slow in appearing, but that it is likely when it does occur to bring more discredit and financial loss to a city than typhoid from any other source.

Medical News

ARKANSAS

Library for Sanatorium.—The people of Little Rock have made a liberal response to the appeal for the establishment of a library at the Arkansas Tuberculosis Sanatorium, Booneville. More than 100 volumes were donated on the first day of the appeal, and it is intended that a permanent library shall be established. It is also suggested that magazine subscriptions be donated.

Personal.—Dr. Harry C. Stinson, Little Rock, superintendent of the State Hospital for Nervous Diseases, has notified the Board of Trustees of State Charitable Institutions that he would not accept reelection for another term and asked to be released from duty at the expiration of his present term of office.——Dr. Sterling B. Gammill, Branch, fell from his buggy, November 29, fracturing three ribs.——Dr. L. O. Hunter, Branch, has moved to Chismville.

ILLINOIS

Physicians' Club Election.—At the meeting of the Physicians' Club of Monmouth, December 2, Dr. Chauncey Sherrick was elected president, and Dr. Joseph R. Ebersole, secretary.

Personal.—Dr. and Mrs. William A. Haskell, Alton, have gone to Bermuda for the winter.——Dr. James H. Walker, Effingham, having passed the required examination, has been commissioned captain and assistant surgeon and assigned to the Fourth Infantry.

Verdict Against Surgeon.—In the third trial of the case of Mrs. Carrie Smith against Dr. Ernest B. Mammen, Bloomington, in which damages were claimed on account of the alleged leaving of a sponge in the abdominal cavity after a surgical operation, a jury in the circuit court is said to have brought in a verdict for the plaintiff, assessing damages of $1,500.

State Board Prosecutions.—S. Hirschfeld, a graduate of the National Medical University, charged with practicing medicine without a license, is said to have been found guilty and fined $200.——In the case of Susannah Dyba, charged with practicing without a license, and said to be an old offender, the defendant is said to have been fined $200 and costs.——In the case of J. A. Nowlin, an osteopath charged with the administration of medicine and also with the practice of surgery, the case was dismissed on account of lack of evidence. The license of osteopaths in Illinois licenses to treat human ailments without using medicine and drugs or the performance of surgical operation.——In the suit brought by the State Board of Health against J. B. Albright, Kewanee, a licensed osteopath, for a similar offense, the defendant is said to have offered to pay a fine of $100 and engage no more in the practice as a physician, but does not wish judgment in court brought against him. The board declined to accept this proposition.——W. J. Bourque, an optician of Chicago, charged with practicing medicine without a license, is said to have been convicted by a jury in the municipal court of Chicago, December 6, and fined $100 and costs.——Madam M. L. La-Mounte, a fortune teller of Chicago, charged with practicing medicine without a license, was found guilty and fined $100 and costs, and paid the fine.——Harrouton Shekerjian, Chicago, charged with practicing medicine without a license, is said to have been found guilty and fined $100 and costs. The fine was paid.——In the suit brought by the board against H. F. Fairfax, Chicago, for practicing medicine without a license, the defendant is said to have been found guilty and fined $100 and costs.

Chicago

Personal.—Dr. William A. Mann, who has been seriously ill with pneumonia, is reported to be convalescent.——Dr. E. L. Cornell, intern in Cook County Hospital, has recovered from an attack of diphtheria.——Dr. William E. Morgan, who was operated on for appendicitis recently, has returned home recovered.

Urge Retention of County Physician.—The new president of the Cook County Board has received letters from many prominent physicians of the city recommending that Dr. Haim I. Davis be retained as county physician on account of the record which he has made in that office, and expressing the hope that political reasons will not cause Dr. Davis' removal.

INDIANA

Personal.—Dr. Louis Severin, Bluffton, health officer of Wells County, has resigned to take effect Jan. 1, 1911.——Dr. Charles W. Shill, Lafayette, has been appointed physician for the Tippecanoe County jail and infirmary.

Superintendent Wanted.—The Board of Trustees of the Indiana State Tuberculosis Hospital, Rockville, is now receiving applications for the position of superintendent of the institution, who will be employed as soon as appropriation is made for maintenance. All applications and recommendations should be addressed to Dr. Henry Moore, president of the board of trustees, Room 25, State House, Indianapolis.

Built Within Appropriation.—The tuberculosis hospital commission, which had in charge the construction of the State Hospital, Rockville, at its meeting, November 30, reported that the hospital was constructed and finished ready for occupancy, with about $100 of the appropriation of $130,000 left to revert to the state treasury. The committee also reported more than $1,000 turned into the state treasury from earnings from the hospital farm during the construction of the building.

Club Interested in Pure Food.—The Board of Directors of the Commercial Club of Indianapolis, has signed a petition favoring the enactment of a federal law regulating the manufacture and sale of food containers and food put up in food containers, compelling the marking of the containers so as to show the net capacity and net quantity contained and providing penalty for violation of these provisions. The club is also endeavoring to interest capitalists of the city in building sanitary tenement houses for the poorer classes of foreigners.

State Health Board Recommendations.—The State Board of Health, at its meeting, November 26, decided to make the following recommendations to the General Assembly: medical inspection of all public schools; approval of the board to plans and specifications of all public buildings before contracts are let; additional legislation to further restrict the pollution of streams, giving the board greater power in the prevention of such pollution; greater power to the board for the prevention of the pollution of sources of water-supply of the state, and greater power to the board in governing the construction of sewers.

IOWA

Ill in Hospital.—Dr. Emma J. Neal, Cedar Rapids, is reported to be ill with typhoid fever at Mercy Hospital, Cedar Rapids, ——Dr. Irving C. Wood, Logan, is ill in the Clarkson Hospital, Omaha.

Small-Pox in Border Town.—The alleged failure of the town officers of Bradyville, Page County, to enforce the state quarantine law in face of an epidemic of small-pox, has caused action to be brought by both the Missouri and Iowa state boards of health as Bradyville is just across the Iowa line from Missouri. The mayor states that there have been fifty cases of small-pox in the town, and that at present there are twenty-two cases in eighteen families.

Southeastern Iowa Physicians Meet.—The thirty-fifth annual meeting of the Southeastern Medical Society was held in Fort Madison, November 17, and the following officers were elected: president, Dr. Clyde A. Boice, Washington; vice-presidents, Drs. Frank C. Roberts, Fort Madison, and Smith A. Spilman, Ottumwa; secretary-treasurer, Dr. Edward F. La Force, Burlington, and censors, Drs. John F. Herrick, Ottumwa; Henry A. Leipziger, Burlington, and Frank R. Mehler, New London. It was decided to hold the next meeting in Washington.

MARYLAND

Personal.—Dr. Earle H. Sneavely, assistant physician at the Springfield State Hospital for the Insane, has been appointed third assistant physician at the Essex County Hospital, Overbrook, N. J.——Dr. Thomas B. McDonald, Cumberland, has been appointed physician of Allegany County.

Typhoid Fever in Troop A.—Dr. Alexius W. McGlannan, Baltimore, chief surgeon, Maryland National Guard, has reported on the cause of the epidemic of typhoid fever in Troop A of the organized militia of Maryland, following the encampment at Gettysburg last summer, which affected the health of eleven and caused one death. He thinks the extension of the disease was probably due to the custom in the troop of using a loving-cup and to an infected milk-supply. He recommends in future, preliminary examination of men, prohibition of fresh milk in camps, and that men submit to antityphoid vaccination.

Baltimore

Conference on Hygiene.—A conference on hygiene, with an exhibit, is to be held in Baltimore about February 1, under the auspices of the Medical and Chirurgical Faculty of Maryland. Dr. Marshall L. Price, secretary of the State Board of Health, will be in charge of the exhibit.

Personal.—Mr. J. Bosley Thomas has been made chemist and bacteriologist of the water department.——Dr. Frederick C. Blanck has been appointed chemist of the city chemical laboratory.——Dr. H. E. Kelsey has been elected vice-president of the North Carolina Society of Maryland.

Local Society Election.—At the annual meeting of the Baltimore City Medical Society, December 6, the following officers were elected: president, Dr. Arthur M. Shipley; vice-president, Dr. Ridgeley B. Warfield; secretary, Dr. William E. Magruder; treasurer, Dr. William S. Gardner; censor, Dr. Charles W. Larned, and delegates to the Medical and Chirurgical Faculty of Maryland, Drs. Richard H. Follis, Archibald C. Harrison, Standish McCleary, William A. Fisher and James M. H. Rowland.

MASSACHUSETTS

Unlicensed Practitioner Fined.—Jeremiah Scopa, East Boston, is said to have been found guilty, November 15, of practicing medicine without a license and to have been fined $100.

Many Medical Alumni.—According to the new directory of Harvard University, recently issued, Harvard now has 3,337 graduates in medicine. This does not include the graduates in dentistry.

Society Election.—At the annual banquet and election of officers of the Somerville Medical Society, held December 1, Dr. Frank L. Morse was elected president; Dr. Robert F. Gilson, vice-president, and Dr. Frederick N. Stephens, secretary-treasurer.

Physician Pardoned.—Dr. Ovid M. Paulhaus, Haverhill, sentenced to state's prison five years ago for having performed a criminal operation which resulted in the death of a Haverhill woman, was released November 25, after having served five years of his six and one-half years' imprisonment.

NEBRASKA

Gubernatorial Appointments.—Governor-elect Aldrich has made the following appointments: Lincoln Hospital for the Insane—superintendent, Dr. John T. Hay, Lincoln (third appointment); physician, Dr. Benjamin F. Williams, Tamora; pathologist, Dr. Lawrence B. Pilsbury, Lincoln; Hastings Asylum—superintendent, Dr. William B. Kern, Grand Island; Norfolk Asylum—superintendent, Dr. Andrew Johnson, Omaha; and penitentiary—physician, Dr. L. R. Jones, Amherst.

Society Elections.—Saline County Medical Society held its annual meeting in Crete, December 8, and elected the following officers: president, Dr. Howard W. Quirk, Crete; vice-president, Dr. Henry Hein, Wilber; secretary-treasurer, Dr. Porter F. Dodson, Wilber; and delegates to the state medical society, Drs. Francis J. Stejskal, Crete, and William S. Warder, Friend.——Lancaster County Medical Society, at its annual meeting in Lincoln, December 3, elected the following officers: Dr. John M. Mayhew, president; Dr. Warwick M. Cowgill, vice-president; Dr. Roy B. Adams, secretary-treasurer; Dr. Eduard W. Rowe, censor; and Drs. J. Stanley Welch and Henry J. Lenhoff, delegates to the state medical association, all of Lincoln. Dr. Francis F. Tucker, formerly of Lincoln, for many years a medical missionary in China, addressed the meeting on "Native Practice in China."

NEW YORK

Mayor Vetoes Action of Council.—Mayor Fuhrman of Buffalo has vetoed the recommendations passed by both houses of the city council, which were to the effect that the joint committee, which is investigating the necessity of building a general city hospital with a pavilion for communicable diseases, should visit other cities where such hospitals exist.

The Day Camp.—The Buffalo Day Camp for Tuberculosis has now been open for three seasons, 108 days in 1908; 141 in 1909; and 157 days in 1910. During this season there was an average daily attendance of 43, and 15,000 meals were served, exclusive of the morning and afternoon lunches. Germany, Poland and Italy were the nations most largely represented at the camp.

Low Death Rate.—The monthly bulletin of the State Department of Health for October, reports 10,942 deaths, equivalent to an annual mortality of 14.5 per 1,000. In October, 1909, the rate was 15.5, and in September, 1910, 15.4. About 21 per cent. of the deaths occurred during the first year of life. There was an increase in the number of deaths from cancer and a decrease in epidemic diseases, pulmonary tuberculosis, diseases of the nervous system, diseases of the circulatory system, pneumonia, and bronchitis.

Personal.—Dr. George A. Newton, Freeport, has succeeded Dr. Edwin Carman as health commissioner.——Dr. William B. May, milk inspector of the Department of Health of Buffalo, has been appointed chief of the State Department of Health, vice Dr. William A. Howe, made deputy commissioner of health of Buffalo.——Dr. Eugene A. Smith has returned to Buffalo and resumed practice.——Dr. Thomas H. McKee, Buffalo, has returned from abroad.——Dr. Alva Le R. Chapin, Niagara Falls, was seriously injured in a collision recently when his automobile was struck by an Erie freight train and demolished.

New York City

Gift to German Hospital and Dispensary.—The trustees of this institution have formally accepted the gift of Mrs. Anna Woerishoffer of $100,000 to be used to found a children's ward to be known as the Dr. Abraham Jacobi Ward.

Epidemic in East New York.—The outbreak of diphtheria and scarlet fever in East New York which was first noted about two weeks ago has assumed epidemic proportions. There are at present about 200 children under surveillance of the inspectors. The scarlet fever is of a mild type.

New York Subscribes Half a Million.—On the eve of the annual meeting of the Red Cross Society it is announced that New York city has completed its apportioned sum, based on ten cents per capita population, for the $2,000,000 endowment fund of the society. New York was the first city to complete its quota.

Another Open Air Classroom.—The architects for the city have filed plans for an open air room and diet kitchen on the roof of the two-story public baths and gymnasium on the north side of Carmine street which will cost $6,000. The room will accommodate as an open air classroom fifty children inclined to tuberculosis.

Dinner to Dr. Weir.—A dinner was given at the University Club, in New York, December 10, in recognition of the half-century of service to the profession by Dr. Robert F. Weir. About a hundred were present, including a large proportion of men who had served as house surgeons under Dr. Weir. Among the speakers were Drs. Maurice H. Richardson, Boston; William L. Rodman, Philadelphia, and William S. Halsted, Baltimore. The proceedings included the presentation of a silver cup to Dr. Weir.

PENNSYLVANIA

State Tuberculosis Exhibit to Go to Wales.—The Pennsylvania Society for the Prevention of Tuberculosis received a request from Wales, December 3, for the loan of its educational exhibit, to be shown in a campaign against tuberculosis now being organized in that country. The request comes from Thomas Jones, secretary of the Welsh National Memorial to King Edward the Seventh, accompanied by the statement that of all the exhibits at the International Congress of Tuberculosis, held in Washington, 1908, that of the Pennsylvania Society was considered the best.

Health Conference.—The Western Pennsylvania Public Health Conference, organized at the instance, and under the auspices of the Central Council of the Associated Charities, was held in Pittsburg, November 29 and 30 and December 1. The opening session was addressed by Dr. Sidney E. Goldstein on "Hospitals and Health Agencies of the Pittsburg District and Their Specific Problems and Needs." The next session was devoted to the general subject of "Dispensaries, Their Places and Function, Methods of Cooperation Among Them, Their Opportunities and Responsibilities for Affecting the Home Conditions and Home Care of Patients;" the opening address being delivered by Dr. Richard C. Cabot, Boston. Remarks were also made by representatives of eighteen dispensaries of Pittsburg, presenting features of their work and suggestions in line with the theme of the meeting. At the first evening session, the general subject was "Restoration and Prevention, How the Curative and Preventive Work of Hospitals and Other Health Agencies may be Promoted and Developed by Developing Social Service and the Human Interest Point of View, Side by Side with Scientific Professional Skill and Material Equipment." Dr. Richard C. Cabot, Boston, delivered an address at this session on "Social Service in Hospitals and Dispensaries," and Dr. Samuel G. Dixon, Commissioner of the Pennsylvania Department of Health, delivered an address illustrated by stereopticon views on "How Pennsylvania Fights Tuberculosis by Improving the Homes, Occupations and Habits of the Tubercular." Nursing was the general topic of the morning session on Wednesday with the theme "How Should Nurses be Enlisted, Selected, Trained and Directed for Competent Service in Hospitals, Dispensaries and Private Families." "What are the Essentials for Visiting Nursing Service to the Poor in Their Homes?" The principal address was by Miss Adelaide Nutting, Johns Hopkins University. Dr. Henry M. Hurd, superintendent of Johns Hopkins Hospital, opened the discussion on hospital cooperation by an address on "To What Extent is it Desirable and Practicable to Develop Means and Habits of Cooperation Among the Hospitals in the Purchase of Supplies, Relations with Employees, Admission of Charity Cases, Publication of Needs Encountered and Work Accomplished in the Holding of Conferences as to Common Problems and in Any Other Appropriate Ways," followed by five-minute remarks from representatives of thirty-five hospitals. Efficiency and finance was the general topic for the evening session, the theme being "By What Standard or Test Should the Work of Hospitals, Dispensaries and Nursing Agencies be Measured?" and "To What Extent and Under What Supervision Should Financial Support be Provided Through Public Funds?" with an address by William H. Allen. The discussion was taken up under the general heads of instruction, subsidies and support. At the morning session of the third day, "Children's Health Agencies" were considered, and in the afternoon the general subject was "Investigation and After-Care of Charity Cases." Dr. Charles P. Emerson, Superintendent of Clifton Springs Sanitarium, delivered an address on "Should Applicants for Free Treatment or Charity Rates be Investigated Before or Upon Admission, and Followed up with Friendly Service After Dismissal?" The discussion was taken up under the general heads of self-help, investigation, after-care, practicability and cost. The afternoon session was devoted to a young men's rally, when the subject "The Young Men's Health Problems, Including Sex Hygiene," was discussed. At the closing session of the conference "Community Education" was considered under the general theme "How May Sickness be Prevented and Good Health Promoted by Improving the Homes and Habits of the People Through Popular Education." The principal address, on "Educating the City," was delivered by Dr. William A. Evans, health commissioner of Chicago.

Philadelphia

Parrish Portrait for College.—At a meeting of the College of Physicians, held December 7, a portrait of Dr. Joseph Parrish was presented by Dr. James Tyson on behalf of the donor. Mrs. Susan Parrish Wharton. Dr. Parrish was born Sept. 2, 1779, was elected a member of the college in 1810 and died Mar. 11, 1840.

Consumptives' Open-Air School.—Preparations are being made for the establishment of an open-air school for the instruction of boys and girls suffering with incipient tuberculosis, which will be under the joint care of the Board of Education and the Department of Public Health and Charities. The school will accommodate more than 100 pupils and classes will be heard out-of-doors during the whole school term.

Personal.—Dr. Louis P. Posey has been appointed a member of the State Board of Medical Examiners, vice Dr. Caleb S. Middleton, resigned.——Dr. Edward Martin has been made Barton professor of surgery in the University of Pennsylvania vice Dr. J. William White, resigned. Dr. Martin and Dr. Charles H. Frazier have been nominated to the board of trustees by the medical committee of the board.——Dr. John G. Clark gave a dinner, December 6, in honor of Dr. Franklin H. Martin, Chicago. Plans were arranged for a clinical meeting of the Physicians of North America in this city in November, 1911, one similar to that held recently in Chicago.——Dr. Matthew H. Cryer, professor of oral surgery in the Dental School of the University of Pennsylvania, has been made editor of the *Imperial Stereoscopic Anatomy of the Head and Neck*, a magazine published by D. D. J. Cunningham and Dr. David Waterson, of the University of Edinburgh, Scotland. ——The directors of the poor of Chester County have chosen Dr. Ralph C. Kell, Philadelphia, as superintendent of the Chester County Hospital for the Insane.

GENERAL NEWS

Academy Mid-Year Meeting.—The fourth annual mid-year meeting of the American Academy of Medicine was held in Buffalo, December 1, under the presidency of Dr. Charles S. Sheldon, Madison, Wis. The conference dealt with the sociologic influences of hospitals and dispensaries.

Personal.—Dr. Wilfred T. Grenfell of Labrador, has been visiting in Charleston, S. C., on his way to the north from Florida.——Dr. Hamilton P. Jones, New Orleans, food commissioner of Louisiana, has been elected second vice-president of the Association of State and National Food and Dairy Departments.——Dr. Robinett B. Hayes, Fayetteville, N. C., has been elected grand regent of the Kappa Psi Fraternity.

Journals Consolidate.—The *Southern Medical Journal* has consolidated with the *Gulf States Journal of Medicine and Surgery*. The editorial office will be Suite 905 Van Antwerp Building, Mobile. The editor-in-chief is Dr. Seale Harris, and the managing editor, Dr. Henry A. Moody, both of Mobile. The associate editors are Drs. John A. Witherspoon, William D. Haggard, Worcester A. Bryan, William Litterer and James M. King, all of Nashville, Tenn. The journal will be conducted on the same high-class lines as before.

The Cartwright Prize.—The Cartwright Prize, valued at $500, biennially awarded by the Association of the Alumni of the College of Physicians and Surgeons, New York City, will be next awarded at the commencement exercises in 1911. Essays to be held worthy of the prize must contain original investigations made by the writer; must be on medical, surgical, or kindred subjects; must be typewritten and in English, and marked with a device or motto, and accompanied by a sealed envelope similarly marked, containing the name and address of the author. The payment of the prize money to the successful essayist will be made on his filing with the treasurer of the association a printed copy of the essay. Essays in competition must be sent to Dr Henry E Hale, secretary of the Association, 770 West End Avenue, New York City, on or before April 1, 1911

FOREIGN NEWS

Other Deaths in the Profession Abroad—General H Laub, surgeon general of the Danish army, died November 12, aged 72, from cancer of the rectum Since his appointment in 1902 as chief of the medical department, it has made great progress under his initiative——The cable also brings word of the death of Professor Henri Huchard of Paris, an authority on diseases of the heart, aged 66 He founded about 1887 the *Revue Clinique et Thérapeutique* and later the *Journal des Praticiens*, and some of his works on the circulatory system and on neuropathology are text books in regular use

Death of Mosso.—The leading physiologist of Italy and a pioneer in the physiology of life at high altitudes, Prof A Mosso, professor of physiology at the university of Turin, died November 24, aged 64 years He founded the *Archives Italiennes de Biologie* in 1882 to present in French the results of the research of Italian workers in this line, much of his own work was published also in Virchow's *Archiv*, especially his monographs on the circulation, respiration, ptomains and functions of the bladder Among his books are "Fear," Fatigue," 'Temperature of the Brain" and "Man in the Higher Alps" He was long a senator, and for his advocacy of athletics was called "the apostle of physical exercise" He was also instrumental in founding the Monte Olen international institute for nature study above the snow-line

Cholera—No cases of cholera have been reported to the sanitary authorities since last June from Spain, Portugal and some of the South American countries, nearly every other country, however, has had cases either in ships in the harbor or on land, but except in the endemic foci no serious epidemic has developed although conditions were threatening in Italy for a time Naples had 329 cases, with 131 deaths between September 25 and November 8, but no new cases have been reported from Naples since November 16 and vessels are resuming their schedules Fourteen provinces of Italy are now infected with cholera, the total number of cases outside of Naples in the six weeks ending November 16, amounting to 536 with 234 deaths, but only forty four cases were reported throughout the kingdom during the following week and none in Naples or Rome No cases have been reported at any time north of Rome and only a few cases have occurred there In Russia the number of officially reported cases by November 19 had reached 213,941 with 99,882 deaths In the countries immediately adjoining Russia to the west the occasional imported contagion is speedily stamped out and no serious trouble has resulted, although Hungary had recorded 288 cases with 139 deaths by October 15

CANADA

Hospital Burns—The Toronto Free Hospital for Consumptives, Weston, was totally destroyed by fire, December 1, with a loss of $100 000 The ninety two patients were all removed without casualty

War on Opium—A bill was introduced into parliament, November 30 by Mackenzie King, minister of labor, making it a punishable offense to use opium except for medicinal purposes The present laws prohibit the importation, sale, or manufacture of opium

Cholera on Royal George—Dr J George Adami, Montreal, announces that although there was a real case of cholera diagnosed on the steamer *Royal George* there is no reason for anxiety, as the cholera microbe is practically harmless in cold weather The thirty seven steerage passengers have been released from detention and sent to their respective destinations

Two Canadian Periodicals Unite—The merger of the *Montreal Medical Journal* into the *Canadian Medical Journal*, the official organ of the Canadian Medical Association, which was announced in these columns October 1, is accomplished With the December issue, the *Montreal Medical Journal* ceased to exist as a separate publication The first issue under the new arrangement will appear in January under the editorial management of Dr Andrew MacPhail, Montreal

Society Elections—The Winnipeg (Man) Clinical Society has elected the following officers president, Dr James G Munroe, vice president, Dr Julius E Lehmann, secretary Dr. Oscar C Dorman, treasurer, Dr. Raymond S Brown, and executive committee, Drs. John H. R Bond, W. H Reilly and Fred A Young——The following territorial members of the Ontario Medical Council have been elected· Drs George R. Cruickshank, Windsor, Albert B Welford, Woodstock, Alexander D. Stewart, Fort William, and Thomas W G Young, Peterboro

Hospital Notes.—The Saskatchewan government has decided to locate the new provincial hospital for the insane at Battleford, and has voted $100,000 for the purpose The land has been secured and building operations will begin in the spring.——Guelph, Ont, is to have a tuberculosis hospital——A new children's hospital is to be erected in Hamilton——A tuberculosis sanatorium is to be installed at Windsor on the old Her homestead——Mrs Jordan of Boston, Mass, has informed the New Brunswick government of her intention to present the property at River Glade, consisting of 700 acres with a large three story house and several other buildings, valued at $30,000, to the government to be used as a tuberculosis hospital

Personal—Dr Murray MacLaren, St John, N B, has returned from abroad——Dr Hugh L Dickey, Van Anda, B C, has removed to Honolulu, H T——Dr Everind A Kirkpatrick, Halifax, is convalescent after severe illness——Dr John C. Mitchell has been transferred from Brockville Hospital for the Insane to the Coburg institution——Dr Edmund E King, Toronto, has been reelected a member of the Ontario Medical Council for East Toronto——Dr David J Dunn has been appointed school health officer of Edmonton, Alta——Drs Pierre A Valois and Joseph A Beaudoin have been appointed civic health officers of Lachine, P Q——Dr Bruce L Riordan, chief surgeon of the Grand Trunk Railway, Toronto, is seriously ill with typhoid fever——Dr Richard J Monahan, Glace Bay, N S, has been appointed senior surgeon of the Canadian Naval Service——Dr Bruce Hill, Winnipeg, who sued the Winnipeg Electric Railway Company for damages for injuries received while a passenger, has been awarded $2 000 and costs

LONDON LETTER

(From Our Regular Correspondent)

London, Dec 3, 1910

Quackery and Nostrums in Great Britain

There are signs that the government will abandon the indifference which has rendered this country an unrestricted happy hunting ground for quacks and nostrum exploiters Recently the government sent forms to the 1,600 health officers of the United Kingdom inviting their opinion on "whether the practice of medicine and surgery by unqualified persons is assuming larger proportions and as to the effect produced by it on the public health" The result is embodied in a recent report On the whole the answers do not point to a large increase in unqualified practice, though such might have been expected from the profusion of advertisements of quack remedies and "specialists" The increase seems to be most marked in large centers of population, but curiously, quackery appears to flourish less in London than in provincial towns The most extensive form of unqualified practice is prescribing by pharmacists, which is practically universal They constantly prescribe for minor ailments or what are believed to be minor The poor are particularly fond of resorting to them because it costs less than going to a doctor In some districts a doctor seldom sees a child of the working class which has not been purged or otherwise treated for several days by a pharmacist Diseases of the skin, the eye, and venereal diseases are much treated by pharmacists, who often also undertake dentistry, and are the chief agents for the sale of nostrums But they sell the latter only when demanded, they prescribe their own preparations if possible, for the profit on their sale is much greater Next to pharmacists come "herbalists"—persons with no pharmaceutical qualification whatever, who sell herbs and other drugs as far as the law allows The only restriction they suffer under, compared to pharmacists, is that they cannot sell poisons They are numerous and rapidly increasing in the large manufacturing towns of Lancashire and Yorkshire As they have no legal status they are more reckless than pharmacists They treat all sorts of diseases, and even visit patients—a thing seldom done by pharmacists "Bone setters" are extensively in vogue in some parts, especially in mining districts, and some of the large friendly societies even accept their certificates as equivalent to that of a physician Of the more fantastic sorts of quackery 'Christian Science" is increasing in several northern towns.

In Yorkshire and Durham the practice prevails of diagnosing and treating ailments by persons in a hypnotic state One great evil from unqualified practice is the spread of infectious disease from failure to diagnose it Cases are quoted of small pox diphtheria, scarlet fever and other diseases being spread in this way In cancer valuable time is lost because the disease is not recognized in its early stage and is then treated by useless drugs

A large section of the report is devoted to nostrums These are purchased extensively by all classes, rich as well as poor The facility with which they can be obtained is strongly condemned They have enormously increased the amount of self drugging, and in the case of incipient disease, such as phthisis they often give rise to delay until the condition is incurable The suggestion is made that the composition of all advertised remedies should be stated, that their analysis should be determined by government analysis at the vendors' expense that the sale of headache powders and similar drugs should be prohibited, and that the sale of infants' food should be regulated For the other forms of unqualified practice no remedies are suggested, and it is difficult to see how they could be In this country the liberty of the individual is held so high that it would be impossible to prevent a person who is ill from taking any advice from any one he wishes The quack labors under only one disadvantage compared with the physician If a patient dies under his treatment he is liable to be indicted for manslaughter But this scarcely ever happens, as medical advice is generally sought before the end If it does happen, he is generally acquitted, as he is held to have done his best and the jury come to the conclusion that medical advice would not have saved the patient

PARIS LETTER

(From Our Regular Correspondent)

Paris, Nov 25, 1910

Protection of Infancy Against Tuberculosis

The eighth general assembly of the organization called La Préservation de l'enfance contre la tuberculose, founded by the lamented professor Grancher, was recently held under the presidency of Dr Roux, director of the Pasteur Institute The purpose of the organization is to remove children of tuberculous families from danger of infection, and to place them in the country among the families of healthy peasants living under good hygienic conditions Only absolutely healthy children, aged from 3 to 13, are accepted The organization has at present a budget of $31,000 (155,000 francs), and has twelve offshoots in the principal cities of France It has 425 protégés distributed in the provinces When the guardianship of the society ceases, the children often remain as agricultural laborers in the localities where they have been placed

Election of Two Correspondents of the Academy of Medicine

In its session of November 22, the Académie de médecine elected, as national correspondents, Dr Lebayle, former intern of the Paris hospitals, dean of the León medical school at Nicaragua and Dr Oui, professor of obstetrics and of the hygiene of early infancy at the Lille medical school

Cholera and a New International Sanitary Conference

In response to a question from a member of the Chamber of Deputies, the minister of the interior has officially made a statement to the effect that the question of a new international sanitary conference has been under consideration for some time Before undertaking a revision of the agreements obtained at the last sanitary conference it is indispensable to make sure that Turkey, which by its geographical situation and the movements of Mussulman pilgrimages, is particularly exposed to the importation of epidemics, should consent to conform to the international sanitary regulations Accordingly the minister of foreign affairs has used his influence to induce Turkey to enter into the sanitary union It seems now that Turkey will be disposed to accede and to call a new sanitary conference soon at Constantinople If these intentions are not realized the initiative no doubt will be taken by one of the governments which are parties to the sanitary union

Honor to Professor Pinard

A few days ago the friends and pupils of Professor Pinard met in the great amphitheater of the medical school to celebrate the twentieth anniversary of his professorship Speeches were made by Professor Landouzy, dean of the medical school, and by Drs Potocki and Segond At the end of the ceremony a commemorative medal was presented to Professor Pinard.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Nov. 24, 1910

Personals

The Prussian Academy of Science has elected the well-known London surgeon, Sir Victor Horsley, and A Mosso, professor of physiology in Turin, as corresponding members The Bavarian Academy of Science has elected Professor Gruber to regular membership.

Bavarian Antituberculosis Association

November 20, a national association for the suppression of tuberculosis was founded in Munich, the function of which will be a systematic campaign against tuberculosis as a disease of the people The Prince Regent has given the association $1 000 (5 000 marks). At the close of the meeting a tuberculosis museum was opened

Medical Study Trip

The German central committee for study trips plans an excursion to America for 1912 in connection with a visit to the International Hygienic Congress at Washington The journey is to last about six weeks and to cost from $400 (1,650 marks) up, according to the cabin occupied The price includes fare on land and sea and lodging and service while in America.

Illegitimacy from the Social Standpoint

A few days ago one of the speakers at the meeting of the German Morality Society (*Sittlichkeitsverein*) reviewed the subject of the social significance of illegitimacy in the light of statistics He first exhibited the varying degrees to which the evil was present among various nations The Netherlands have 2 5 per cent of illegitimates, Switzerland 4 5, Prussia 9, Saxony 12, Bavaria 14 and Austria above 14 In the same country differences are found Thus North Bavaria has 8 per cent, South Bavaria, 20 Further differences may be noted between town and country Vienna and Munich have quite 30 per cent of illegitimate births, but it must be noted here that the lying in institutions in large cities influence the statistics unfavorably The first factor in the etiology of illegitimacy is the special make up of the population, the proportion of unmarried members of both sexes The probability of illegitimate births is greater, the greater the number of the unmarried, the young, and particularly of young females in the population The Westphalian industrial district, Istria and Dalmatia, in which there is an overplus of men, show only from 3 to 4 per cent of illegitimate births In the Alps and certain agrarian districts in which marriage is commonly entered into late, there is a high percentage of illegitimacy Economic and social conditions also exercise an influence The difference between the social relations and the trade conditions of town and country are not without their effect The observation has been made that four fifths of the illegitimate mothers in the city are from outside and come mostly from simple conditions of life to fall victims to the complicated relations in the great city Half of the illegitimate mothers in the city are orphans (*verwaist*) Finally, ethical conditions, education and race have their effect, thus the Bavarians have the highest rate of illegitimacy.

The speaker also discussed the situation and fate of illegitimate children These children are in greater danger than the legitimate, even after birth, and show a larger ratio of stillbirths In Prussia 34 per cent of illegitimate children die in the first year of life as compared with 18 per cent of the legitimate In Berlin the ratio is 39 to 19 per cent As a matter of fact, the percentage is still more unfavorable and, if the children legitimized in the first year are accounted for, must be placed as high as 46 per cent The causes of this mortality are the unfavorable conditions of care, the frequent change of nurses, and lack of proper support In the first year of life not one half are supported and at the age of 14, only 15 per cent The frequent change of caretakers in later childhood leads to neglect As a consequence of this, criminality is very large among the illegitimate and their industrial training is faulty Finally, the speaker discussed the ethical principles for the protection of the illegitimate Support, titular guardianship and police oversight of the care of the infants are inadequate The only remedy which is of actual value is trade union guardianship (*Berufsvormundschaft*) This can promptly bring the father of the illegitimate child to support it (in Strasburg 59 per cent voluntarily supported their children, while 86 per cent were reached by compulsory measures) This measure also makes possible a proper choice and supervision of the places where the children are cared for, and is financially favorable to the city, while it has also great ethical importance.

Marriages

Charles Pius, M.D., Guadaloupe, Cal., to Miss Eloise Moore of Willows, Cal., November 24.

Luther Raymond Poust, M.D., to Miss Helen M. Alexander, both of Philadelphia, November 30.

Roy Homer Dyer, M.D., Marshall, Mo., to Miss Frances McClure of Houstonia, Mo., November 23.

Emil E. Nussle, M.D., Chippewa Falls, Wis., to Mrs. Jessie Pottle Cox of St. Paul, Minn., December 7.

James Keeley Everhart, M.D., Pittsburg, Pa., to Miss Susan B. Thorley of Harrisburg, Pa., October 22.

Thomas B. Coulter, M.D., Chickasha, Okla., to Miss Hortense B. Rose, Avondale, Cincinnati, November 28.

Deaths

John Cummings Munro, M.D. Harvard Medical School, Boston, 1885; died at his home in Boston, December 6, from recurrent cancer, for which operation had been performed three years before, aged 52.

A Franklin medal scholar and graduate of the Boston Latin School Dr. Munro entered Harvard University in 1877, graduated in 1881, and received the M.D. degree from Harvard Medical School four years later. Establishing himself in general practice in Boston, he soon began to specialize in surgery, developing a rare skill which placed him early in his career in the front rank of the profession. Dr. Munro was associated with the Harvard Medical School as assistant in anatomy from 1889 to 1893; assistant demonstrator of anatomy from 1893 to 1894; assistant in clinical surgery from 1894 to 1895; instructor in surgery, 1896 to 1902, and lecturer in surgery, 1903 to 1905. He was keenly interested in the development of surgery toward which his work was a great contribution. He was surgeon at the Boston City Hospital, 1893 to 1903; consulting surgeon, St. Luke's Home, 1901; special consulting surgeon Quincy Hospital, 1902; consulting surgeon, Framingham Hospital, 1905; surgeon to out-patients, Carney Hospital, 1891 to 1896; and surgeon-in-chief, Carney Hospital since June, 1903. He was a member of the American Medical Association and chairman of the Section on Surgery in 1909; Association of American Anatomists, American Surgical Society, Clinical Surgical Society, of which he was president in 1905; Boston Society of Medical Sciences, Boston Society for Medical Improvement, American Academy of Medicine, Southern Surgical and Gynecological Association, an honorary member of the Vermont Medical Society, the Canadian Medical Association, and the Philadelphia Academy of Surgery.

John C. Da Costa, 1834-1910

John C. Munro, 1858-1910

Dr. Munro belonged to the group of surgeons who went through a long apprenticeship in anatomy as a preparation for surgery. He was noted for his skill in dissection, and for the simplicity and clearness of his demonstration. To this anatomic training was probably due, in a large measure, the technical skill in operation which so distinguished him. He combined, however, with this technical skill, accuracy in diagnosis and remarkable surgical judgment. Entering into surgery at the beginning of the antiseptic period, he quickly acquired a thorough mastery of the details of the method.

Dr. Munro will best be known for his surgical clinic at the Carney Hospital which was instituted in 1903. The establishment of this clinic which carried with it responsibility for the entire surgical service of the hospital, was an important event, as it was the first permanent surgical service to be established in New England. The clinic, under Dr. Munro's guidance, quickly acquired a high rank among the surgical clinics in the country, and, of the surgical clinics in New England, was among the best known and the most frequently visited. His work there served a most useful purpose in various ways. It demonstrated the possibility of doing satisfactory surgery, successful in its results, with simplicity of plant and technic and with a minimum of red tape. In its instruction, it had to do with and reached not so much the undergraduate in medicine as the general practitioner, the worker in the surgical field, the visitor in search of sensible ideas and their application in the field of surgery. At this clinic true charity to the deserving poor was dispensed. The wide-spread abuse of the charity of the medical profession was here combated in the only way in which a successful struggle against it can be made, by refusing charity to those who do not merit it. Dr. Munro not only had strong convictions on this matter, but had the courage to put these convictions into practice in the face of much unfavorable and unjust criticism.

Dr. Munro was well known both in this country and abroad. His contributions to the literature of surgery were numerous and on a variety of subjects. He wrote as he spoke, simply and clearly, and was always conservative and modest in stating his part. His skill as a surgeon was acknowledged by all. Back of it, however, and revealed to but few, were qualities of mind and heart that deserve more admiration than his skill and made the man even greater than the surgeon. Fearless honesty in all things, staunch loyalty to his ideals and to his friends, straightforwardness in his actions, simplicity and cleanliness of life, and modesty as to his self and his achievements were strong characteristics of John Munro. Keen in his observation of men and their methods, he was always charitable in his judgments of both. Traveled, well versed in general literature, appreciative of art in all its aspects, he made a most charming companion. His influence on his fellows was wide and stimulating. A hard worker himself, he incited younger men to action and his hand was ever ready to aid and to encourage them in honest endeavor.

Though naturally undemonstrative and retiring, he was a loyal and devoted friend, and the place he occupied in the affections of the many who knew and loved him for his worth will not be filled.

John C. DaCosta, M.D., a well-known gynecologist of Philadelphia, died at his home, December 6, from pneumonia complicated by arteriosclerosis, aged 76. As a young man, DaCosta was a civil engineer, and was a member of the staff of engineers of the St. Paul and Duluth Railroad for about twenty years. At the age of 40 he took up the study of medicine in Jefferson Medical College, and graduated from that institution in 1878.

Immediately following his graduation, Dr. Da Costa became instructor in his alma mater and was then made demonstrator of obstetrics. He served for more than twenty years as visiting gynecologist to Jefferson Medical College Hospital, and on his retirement several years ago, was made emeritus gynecologist. He was visiting physician to the Lying In Charity Hospital, and visiting gynecologist to St. Agnes Hospital. He was a member of the American Medical Association, president of the Philadelphia Obstetrical Society, and a fellow of the College of Physicians of Philadelphia.

Thomas Gill Nock, M.D. Syracuse (N. Y.) University, 1883; formerly a member of the American Medical Association; a member of the Medical Association of New York and New England Railway Surgeons; Society of the State of New York; mayor of Rome in 1904 and 1905, and for six years a member of the fire and police commissioners; three terms coroner of Onedia County; a member of the board of managers of the Utica State Hospital, and local surgeon to the New York Central Railroad Company; was found dead at his home, November 28, from strangulation, aged 51. Dr. Nock had been in ill health for several years, and it is believed that while mentally irresponsible, on account of ill health, he committed suicide.

John Frederick Haller, M.D. University of Buffalo, N. Y., 1888; a member of the Medical Society of the State of New York; consulting gynecologist to Jamaica Hospital; visiting physician to the Bushwick Hospital for Children; examining physician of the Department of Charities for Brooklyn; one of the organizers of the Swedish Hospital; a surgeon of volunteers during the Spanish-American War, attached to the Tenth U. S. Cavalry; died at his home in Brooklyn, December 3, from pneumonia, aged 48.

Abram Brothers, M.D. College of Physicians and Surgeons, New York City, 1884; a member of the American Medical Association, New York Academy of Medicine, and New York Obstetrical Society, founder and once president of the Eastern Medical Society; visiting gynecologist to the New York Post-Graduate and Beth Israel Hospitals; associate professor of Gynecology in the Post-Graduate Medical School; died at his home in New York City, October 13, from diabetes, aged 49.

Julius Pohlman, M.D. University of Buffalo, N. Y., 1883; a member of the Medical Society of the State of New York; formerly assistant in the Museum of Natural Sciences, Buffalo, and later director; lecturer in physiology in his alma mater from 1883 to 1886, and from that time until 1898, professor of physiology; a specialist in diseases of the eye; elected general secretary of the German Society of Naturalists in 1888; died at his home in Buffalo, December 6, aged 62.

Josiah Nichols Woodward, M.D. Dartmouth Medical School, Hanover, N. H., 1880; a member of the New Hampshire Medical Society, and a member of the staff of the Nashua Hospital; city physician of Nashua for three years; a member of the board of health for four years; a member of the common council, and a member of the legislature in 1893 and 1909; died at his home in Nashua, November 28, from abscess of the liver, aged 54.

Benjamin Franklin Haskins, M.D. Bellevue Medical College, 1873; of La Junta, Colo.; formerly a member of the American Medical Association; a veteran of the Civil War; secretary for many years of the school board of Alamosa and La Junta, Colo.; division surgeon of the Denver and Rio Grande Railroad at Alamosa; and consulting surgeon to the Santa Fe Hospital, La Junta; died in Washington, D. C., October 4, aged 62.

Frederick Francis Kelly, M.D. New York University, New York City, 1888; a member of the Prince Edward Island Medical, Maritime Medical, and Canadian Medical Associations; a member of the city council of Charlottetown, and once mayor of the city; a member of the staff of the Charlottetown Hospital; died in that institution, June 5, from mastoid disease, aged 44.

William McAfee Hanna, M.D. University of Louisville, 1862; of Henderson, Ky.; assistant surgeon of Colonel Basil Duke's regiment, C. S. A., during the Civil War; formerly a member of the American Medical Association; for several years a member of the Henderson Board of Health; died in Letcher's Hospital, Henderson, November 28, from cerebral hemorrhage, aged 73.

Clarence W. Erwin, M.D. Medical College of the State of South Carolina, Charleston, 1880; of Erwinton, S. C.; corresponding secretary and treasurer of the Christian Church of South Carolina for twenty-two years; prominent as a planter and physician; died at the home of his brother in Allendale, November 23, from nephritis, aged 53.

William Allen Hubbard, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1876; formerly hospital steward in the Freedman's Bureau, Pine Bluff, Ark., and later apothecary in the U. S. Marine-Hospital Service; later a practitioner of Billerica, Mass., and superintendent of Winchester Hall; died at his home in Boston, Oct. 22, 1909, aged 66. (Bu)

Julien E. Hequembourg, M.D. Rush Medical College, 1882; of Chicago; a member of the American Medical Association, and Physicians' Club of Chicago; attending physician to St. Joseph's Hospital, and the Daily News Sanitarium for Babies; died suddenly while making his rounds in St. Joseph's Hospital, Chicago, December 8, from heart disease, aged 54.

Oliver A. Harrison, M.D. University of Louisville, Ky., 1882; a member of the Mississippi State Medical Association; local surgeon for the Queen and Crescent System; who had been incapacitated from active service since last winter when he fell on the ice, fracturing his right femur; died at his home in Meridian, December 3, aged 65.

Montraville McHenry, M.D. University of Vermont, Burlington, 1878; a member of the Medical Society of the State of Pennsylvania, and a member of the House of Delegates from the Columbia County Medical Society at the 1910 meeting; died at his home in Benton, December 1, from cerebral hemorrhage, aged 74.

John H. King, M.D. University of Wooster, Cleveland, 1872; formerly of Butler and Saxonburg, Pa., and a member of the city council and school board of the latter place; died, November 26, near his home at Houseville, from injuries and exposure following an accidental fall over an embankment, aged 67.

Benjamin Williams, M.D. Medical School of Maine, Brunswick, 1864; assistant surgeon of the Eighth Maine Volunteer Infantry during the Civil War; and later state commander of the Grand Army of the Republic; twice mayor of Rockland, Me.; died in Prospect Harbor, Me., November 27, aged 75.

Francis Howe Munroe, M.D. New York Homeopathic Medical College, New York City, 1886; a member of the staff of St. Mary's Hospital, Passaic, N. J., and the Essex County Homeopathic Hospital; died at his home in Newark, N. J., November 29, from cerebral hemorrhage, aged 48.

Patrick Henry McRaven, M.D. Missouri Medical College, St. Louis, 1878; formerly of McClure, Ill., but for a few months a resident of East St. Louis; at one time a member of the staff of the Anna State Hospital; died at his home in East St. Louis, November 21, from pneumonia, aged 58.

Andrew Jackson Sibley, M.D. University of Tennessee, Nashville 1894; a member of the State Medical Association of Texas; one of the board of censors of the Seventh Councilor District Medical Society; died at his home in Creedmoor, June 29, from cerebral hemorrhage, aged 45.

Wear F. Armstrong, M.D. Southwestern Homeopathic Medical College, Louisville, Ky., 1899; a member of the American Medical Association; died at his home in Henderson, Ky., September 12, during an injection of antistreptococcus serum for an infected operation wound, aged 36.

James J. McKone, M.D. Bellevue Medical College, 1887; a member of the American Medical Association; surgeon to St. Joseph's Hospital, Tacoma; acting assistant surgeon, U. S. P. H. and M.-H. Service; died in his apartments in Tacoma, November 27, from pneumonia, aged 47.

Alonzo R. Todd, M.D. Jefferson Medical College, 1880; of Ocean Grove, N. J.; formerly of Baltimore; a member of the Ocean Grove Board of Education; died at the Jefferson Hospital, Philadelphia, November 25, after an operation for the removal of gall-stones, aged 55.

Joel Hill, M.D. College of Physicians and Surgeons, Baltimore, 1880; a member of the Medical Society of the State of North Carolina, and Association of Surgeons of the Southern Railway; died at his home in Lexington, November 22, aged 55.

Harold B. Marchant, M.D. McGill University, Montreal, 1910; of Victoria, B. C.; died at the Terminal City Hospital, November 17, from injuries received while leaving the Britannia Mine, Howe Sound, the day before, aged 28.

Wash Miller, M.D. University of Louisville, 1866; of Winchester, Ky.; for many years president of the Citizens National

Bank in that city; died at the Brown-Proctoria Hotel, Winchester, October 27, from angina pectoris, aged 71.

William Perry Bennett, M.D. Washington University, St. Louis, 1844 or 1845; a well known physician and clergyman of Daviess County, Ky.; died at the home of his son in Utica, October 29, from senile debility, aged 87.

Edward G. Cannon, M.D. Louisville; a veteran of the Mexican War; at one time a circuit rider in southeastern Kentucky; for ten years a resident of Nome, Alaska; died in that place, November 21, from pneumonia, aged 87.

John Henry Arnold (years of practice, Arkansas); for many years a practitioner of Indian Territory; a veteran of the Civil War; died at his home near Henderson, Okla., December 1, from bronchopneumonia, aged 62.

Samuel A. Huffman, M.D. St. Louis College of Physicians and Surgeons 1896; formerly president of the Macoupin County (Ill.) Medical Society; died at his home in St. Louis, November 24, from heart disease.

Robert G. Simpson, M.D. Medical College of Ohio, Cincinnati, 1876; of Modesto, Cal.; formerly of Rising Sun, Ind.; died at the home of his nephew in Modesto, December 1, from heart disease, aged 64.

John M. Sweezy, M.D. Cincinnati College of Medicine and Surgery, 1860; of Cross Plains, Ind.; died in the Madison Sanitarium, Versailles, Ind., November 29, from senile dementia, aged 81.

Charles Butler Stiles, M.D. University of Edinburgh, 1887; died at his home in Hillview, N. Y., November 19, from injuries received from a fall over a steep embankment, aged 49.

Everett Grover Cleveland Snyder, M.D. University of Louisville, 1910; an intern in St. Vincent's infirmary, Little Rock, Ark.; died in that institution, October 17, from typhoid fever, aged 26.

George Frederick Emery, M.D. Queens University, Kingston, Ont., 1889; an eye, ear, nose and throat specialist of Ottawa; died at his home, November 23, from disease of the intestines, aged 43.

Thomas Rhoades Austin, M.D. Eclectic Medical Institute, Cincinnati, 1877; a veteran of the Civil War; died at his home near Neosho, Mo., November 12, from paresis, aged 69.

John Henry Bass, M.D. Louisville, 1859; surgeon in the Confederate service during the Civil War; died at his home in Abilene, Tex., November 14, from tuberculosis, aged 71.

F. Emile Gilbert, M.D. Laval University, Quebec, 1900; a member of the Société Médicale de Quebec; died at his home in Fraserville, Que., October 15, from pneumonia, aged 36.

Albert E. Auringer, M.D. Hahnemann Medical College, Chicago, 1888; of Mendota, Ill.; died December 4, while making a professional call, from cerebral hemorrhage, aged 53.

John E. McCune, M.D. Ohio, about 1850; died at the home of his niece in Plain City, Ohio, October 30, from senile debility, aged 84.

Pharmacology[1]

ANADOL MISBRANDED ?

The United States District Attorney in Chicago has filed information against C. G. Wheeler of the Wheeler Chemical Works, Chicago, for misbranding "Anadol." This nostrum, our readers will remember, was exposed by the Association chemists in THE JOURNAL, May 21, 1910, p. 1704. Anadol is one of those vicious mixtures which physicians are asked to prescribe, and which contain the dangerous, though if rightly used valuable, drug, acetanilid; yet there is no statement in the advertising matter or on the label to indicate its actual composition. Happily such preparations are gradually becoming extinct, and the Council on Pharmacy and Chemistry, and the Chemical Laboratory of the American Medical Association are to be credited, in great part at least, for this change in conditions. Of course, our exposé of this nostrum did not prevent its being advertised to, and prescribed by, those physicians who prefer to depend on the "literature" of proprietary promoters. But this action of the government will certainly put an end to this product, so far, at least, as interstate commerce is concerned.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

TABLETS OF BISMUTH, OPIUM AND PHENOL

A Second Examination Which Illustrates the Limitations of Tablet Compounding

W. A. Puckner and W. S. Hilpert

More than two years ago the examination of tablets of bismuth, opium and phenol was taken up in the Association laboratory to determine the reliability of pharmaceutical preparations of complex formulas, more or less difficult to prepare. The result of this examination, published in THE JOURNAL, July 25, 1908, p. 330, showed that the tablets sold by different firms contained amounts of phenol ranging from 72.65 per cent. down to 12.66 per cent. of the amount the tablets were claimed to contain. In discussing this discrepancy three questions may be asked: 1. Are these supposedly reputable firms deliberately selling these products below standard? 2. Are these firms unable to determine the quality of their product? 3. Do these firms merely neglect to determine the composition of the finished product? In other words are these firms dishonest, incompetent, or merely negligent? Considering the standing of the firms named in the report one would hesitate to say that these discrepancies were due either to dishonesty or to incompetence and would be inclined to take the more charitable view of negligence.

Two years having elapsed and the report of the laboratory having been given the widest publicity, it would seem that if these firms were ignorant of the real composition of their product at the time the examination was made and published, they would by this time have had ample opportunity to correct the matter, and either to have brought the products up to the claim or else to have discontinued their sale.

To determine whether the discrepancies pointed out in the report referred to could be ascribed to ignorance and whether the firms had made any effort to improve the quality of the products, specimens of these tablets as sold by each of the firms concerned in the first report were again purchased from one of the large wholesale drug houses and their phenol content again determined.* The following table gives the result of this examination:

Manufacturer.	Per cent. phenol according to formula on label.[1]		Per cent. phenol found.		Amount found expressed as per cent. of amt. claimed.[2]		Percentage of variation (plus or minus) between 1908 and 1910 findings.
	1908	*1910*	*1908*	*1910*	*1908*	*1910*	
Hance Bros. & White	8.45	8.19	1.85	2.80	21.89	34.19	+ 12.30
W. S. Merrell Chem. Co...	6.30	6.91	3.08	3.98	48.89	57.59	+ 8.70
H. K. Mulford Co.	1.72	1.70	0.90	1.08	52.34	63.53	+ 11.19
Parke, Davis & Co.......	6.08	5.42	...	2.54	70.23	46.86	—23.37
Sharp & Dohme	8.41	8.49	6.11	4.43	72 65	53.39	—19.26
F. Stearns & Co.	7.27	7.51	1.93	1.74	26.55	23.17	— 3.38
Truax, Greene & Co.......	10.03	10.00	1 36	2.81	13.69	28.09	+ 14.40
H. K. Wampole & Co.......	8.98	8.80	3.49	4.73	39.31	53.75	+ 14.44
W. R. Warner & Co.	12.08	12.15	1.53	1.49	12.66	12 27	— 0.39

1. These figures were calculated from the claimed phenol-content of each tablet and the average weight of the tablets found.

2. These figures were calculated from the percentage of phenol claimed (Column 1) and the percentage found (Column 2).

From the above results it is seen that at the present time the phenol-content of the tablet now ranges from a maximum of 63.53 per cent. down to a minimum of 12.27 per cent. of that claimed on the label. The products of some of the firms have improved somewhat, while the products of others are worse than they were two years ago. On the whole, it seems that many of the firms still sell these products without being greatly concerned as to their composition. But one firm, whose product contains nearly two-thirds (⅔) of the amount of phenol claimed, the H. K. Mulford Co., appears to have considered the past report. The trade package now bears the following legend: "The amount of phenol in this tablet on account of its volatile nature is approximate." It would seem then, that, of the three alternatives suggested, the one ascribing this discrepancy to negligence must be discarded and the profession must decide whether it is to be attributed to incompetence or dishonesty.

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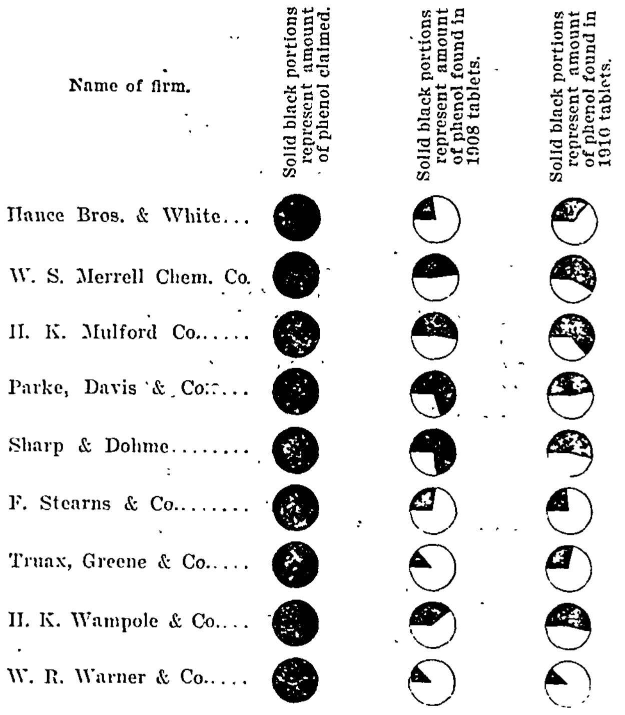
* For method of analysis see "Method B," in "Reports of the Chemical Laboratory of the American Medical Association," 1, 28.

Editorial Note:—The findings of the Association chemists are not creditable to the pharmaceutical manufacturers concerned. The question asked is a serious one. Regarding at least most of the firms the charge of incompetence would hardly hold, since they employ chemists who are men of standing and are known to be entirely competent to control the manufacture of their products. To say that these firms are dishonest in the matter is a serious charge and no one will believe for a moment that they deliberately used a deficient amount of drug for the sake of saving a few paltry cents in the manufacture of these tablets. We would be inclined to take the view that these firms have little respect for physicians who use such complex mixtures; that, though producing, as a general rule, reliable and honest medicines they believe that in the case of products such as these, scientific accuracy is a waste of time. Perhaps they are right. At least, this should serve as a lesson to physicians who are inclined to use complex, ready-made formulas of this kind and persuade them to write individual prescriptions whose correct compounding by competent pharmacists may be depended on



The above chart presents the findings of the Association chemists in a graphic form and shows the great discrepancies between the claims made for the tablets and the actual facts. The solid black portions represent the phenol-content. In the first column is given the phenol content claimed by the manufacturer; in the second column is shown the actual phenol-content found in the tablets purchased in 1908, while the third column represents the phenol-content as found in the tablets purchased in 1910.

Correspondence

Priority in a Method of Prevention of Perforation in Submucous Resection

To the Editor:—*Nihil novum sub sole!* In to-day's mail I received The Journal of November 19 containing (p. 1785) an article of mine entitled "An Original Method for Prevention of Perforation in Submucous Resection." In the same mail I received, from its author, Dr. William R. Murray of Minneapolis, a reprint of an article from the *St. Paul Medical Journal* of January, 1907, on "The Submucous Resection of the Nasal Septum for the Correction of Septal Irregularities," on page 4 of which I find this marked paragraph: "For this reason I prefer to make the incision through the cartilage a little posterior to the primary incision through the muco-perichondrium, if the character of the deviation will allow it, in order that the membrane on the convex side may cover any such accidental puncture of the opposite membranes."

The assumption of originality in my article was made in good faith. I evolved this method for my own use, absolutely without any knowledge that Dr. Murray had worked out practically the same principle in 1907. Now that he has so kindly and promptly brought his article to my attention, I gladly avail myself of this opportunity of giving him due credit for priority.

Richard M. Nelson, M.D.,
Colon Hospital, Cristobal, C. Z.

Thanksgiving Celebration of American Physicians in Vienna

To the Editor:—Many of the American physicians studying in Vienna decided to celebrate Thanksgiving Day in a befitting manner. Semmering with its beautiful surroundings offered them the greatest attraction and the Pension Alpenheim was secured for this festive occasion. Among those present were:

Dr. and Mrs. J. J. Durand, Atlantic City, N. J.
Dr. and Mrs. Charles A. Drake, Norwich, N. Y.
Dr. and Mrs. B. F. Ochs, New York.
Dr. and Mrs. E. C. Dalton, Valdez, Alaska.
Dr. and Mrs. S. M. Rinehart, Pittsburg.
Dr. and Mrs. A. C. Tingdale, Minneapolis.
Dr. and Mrs. Milton A. Shlenker, New Orleans.
Dr. Lee Edwards, Toronto, Canada.
Dr. F. O. Kershner, Clinton, Iowa.
Dr. George I. Barber, Chicago.
Dr. E. C Wrightsman, South Chicago, Ill.
Dr. Joseph Schwarz, Mobile, Ala.

The physicians and their wives entered into the spirit of the occasion with great enthusiasm. Mrs. Lovasy, the hostess, announced dinner at 2 p. m., and surprised all with the banquet table dressed in the American colors. Flags and bunting and the beautiful ladies who graced the occasion made a picture which aroused the American patriotism of all present. After turkey, cranberry sauce and plum pudding were served, the health of the president and of the kaiser were toasted, and this was followed by a dance.

M. A. Shlenker.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF ACIDOSIS—CASOID FLOUR

To the Editor:—1. Is the presence of acetone and diacetic acid in the urine an infallible sign of severe acidosis? What do you think of the following case? In a married woman, aged 28, whose mother died of diabetes, diabetes was discovered about a year and a half ago. The patient was given Fowler's solution by her physician, but never put on a strictly starch-free diet. I saw her first Oct. 1, 1910, when the condition was as follows: Twenty-four-hour amount of urine, 50 ounces; 3.4 per cent. of sugar, no albumin, no casts. Sodium nitroprussid test for acetone strongly positive; ferric chlorid test for diacetic acid also very strongly positive. General condition of patient was very good; she felt fine and was not easily fatigued. I put her on Forchheimer's test diet and within two weeks the urine was entirely free from sugar, but there was still the acetone and diacetic acid, although I gave her 30 grains of sodium bicarbonate three times a day. Still she feels perfectly well and vigorous. On November 1 I started giving her two ounces of wheat bread daily. Sugar at once appeared in the urine, about 0.45 per cent. November 7 I changed to three ounces of bread made from gluten flour (40 per cent. of protein), allowing two ounces of oatmeal also. Sugar remains about 0.45 per cent. Twenty-four-hour amount has ranged from 48 to 65 ounces; specific gravity never above 1.030, acetone and diacetic acid constantly present in large amounts, and patient feeling perfectly well. Thirty grains of sodium bicarbonate, three times a day, has been continued from the start. What prognosis would you give? What treatment would you advise?

2. What do you know about "casoid flour," made in England, sold by T. Leeming, 43 Warren Street, New York, and represented as a starch-free flour?

H. M. M.

ANSWER.—1. Oxybutyric acid, diacetic acid and acetone are known as the acetone bodies. According to present chemical opinion they are largely derived from the fatty acids and appear in the blood and in the urine when large amounts of fats are metabolized in the body. Being acid, they reduce the alkalies of the body and produce the condition known as acidosis. In many cases the formation of these acetone bodies is due to lack of food, without any failure to utilize sugar properly. These bodies also appear in diabetes when sugar formed from ingested carbohydrates, or from the proteins of the foods or tissues, cannot be utilized in sufficient quantity to maintain nutrition. When there is no failure to utilize sugar, and in mild cases of diabetes, the administration of carbohydrates will prevent the formation of these acetone bodies. Acidosis produced by the acetone bodies may be either of a low grade, in which case it does not seriously affect the prognosis, or it may be extreme, in which case it portends the oncoming of diabetic coma. In the case described it would be impossible to give a reliable prognosis without quantitative measurements of the acidosis by determination of the amount of acetone bodies and of the acidity and ammonia content of the urine. Inasmuch, however, as the patient does not seem to be materially affected by the acidosis, a relatively favorable but guarded prognosis should be given. The treatment has evidently been correct and should be continued. An attempt, however, to find a carbohydrate that can be utilized by the patient would be desirable. We would suggest the trial of more oatmeal and less flour. It is evident that gluten flour, with 40 per cent. protein, still contains a very large proportion of carbohydrates. Potatoes might also be tried as a source of utilizable carbohydrate.

2. Analyses of casoid flour have shown it to be practically free from carbohydrates. The statement that it is entirely starch-free has not been true in the past, and on account of this unsubstantiated claim it has not been accepted by the Council. The casoid biscuit, or crackers, contain an appreciable, although small, amount of carbohydrates. Casoid flour, however, is not a gluten flour, but contains casein.

A CONVENIENT STAIN FOR THE SPIROCHÆTA PALLIDA

To the Editor:—I notice that in THE JOURNAL (December 10, page 2081) you give the Giemsa stain as an effective method for demonstrating *Spirochæta pallida*. While the results obtained with the Giemsa mixture are perfectly satisfactory, the time required renders it inconvenient. The following method, a description of which I published in 1903 (*Med. News*, 1903, lxxxiii, 248), gives the same results as the Giemsa and requires only ten minutes.

Smears of serum from the lesion are dried and fixed in strong methyl alcohol for two minutes. They are then stained for eight minutes, as follows: About 0.5 c.c. of a 1 to 1,000 aqueous solution of Grübler's eosin W G is placed on the surface of the smear. An approximately equal quantity of a 1 to 400 aqueous solution of Grübler's azure I is squirted on the slide from a pipette bottle and thoroughly mixed with the eosin. The exact quantities are unimportant. The staining mixture precipitates somewhat and should have a predominantly blue color. After eight minutes the slide is washed off in a strong stream of water. It will then be found to be stained perfectly as with the Giemsa method, and the *Spirochæta pallida*, if present, can be easily demonstrated.

This stain has been used by me and by my pupils for the past eight years as a general blood-stain, especially suitable for malarial parasites. The staining can be very considerably shortened, and for general purposes it is occasionally an advantage to use azure II, which contains some methylene blue, instead of the azure I.

FRANCIS C. WOOD, New York.

PRICES OF FOREIGN PUBLICATIONS

To the Editor:—Kindly let me know the subscription price and address of the *Presse Médicale* of Paris and the *British Medical Journal* of London.

H. E. RANDALL, Flint, Mich.

ANSWER.—*British Medical Journal*, 429 Strand, London, England, $8 a year, including postage; *Presse Médicale*, 120 Boul. St. Germain, Paris, $3.75 a year, including postage.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Dec. 10, 1910.

Eber, A. H., M.R.C., December 1, reported for temporary duty at Fort Dade, Fla.

Patterson, R. F., D.S., December 3, reported for temporary duty at Fort Thomas, Ky.

Stallman, George E., D.S., December 1, returned to Fort Sam Houston, Texas, from temporary duty at Fort McIntosh, Texas.

Halliday, Charles H., M.R.C., December 3, left Fort Fremont, S. C., on ten days' leave of absence.

Bowen, Albert S., lieutenant, December 3, left Fort Snelling, Minn., on ten days' leave of absence.

Sherwood, John W., M.R.C., December 5, reported for temporary duty at Fort Strong, Mass.; left Fort Andrews, Mass., same date.

Weston, Henry R., M.R.C., December 5, left Fort Strong, Mass., on thirty days' leave of absence.

Long, Charles J., D.S., December 9, reported for duty at Fort Andrews, Mass.

Trinder, J. H., M.R.C., December 8, reported for duty at Fort Jay, N. Y.

Medical Corps, U. S. Navy

Changes for the week ended Dec. 10, 1910.

Parker, E. C., surgeon, ordered to the naval academy.

Stuart, A., surgeon, detached from the naval hospital, Boston, and directed to continue duty at the navy recruiting station, Hartford, Conn.

Olson, G. M., asst.-surg., transferred to the retired list from Dec. 2, 1910; ordered home.

Randall, J. A., P. A. surgeon, and Brown, H. L., P. A. surgeon, detached from the naval hospital, Olongapo, P. I., and ordered home.

Thomas, G. E., asst.-surg., detached from the naval hospital, Canacaco, P. I., and ordered to duty at the naval hospital, Olongapo, P. I.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Dec. 7, 1910.

Carmichael, D. A., surgeon, leave of absence for nineteen days from Nov. 15, 1910, amended to read eighteen days from Nov. 15, 1910.

White, J. H., surgeon, granted twenty days' leave of absence from Dec. 2, 1910, without pay.

Williams, L. L., surgeon, granted seven days' leave of absence from Dec. 2, 1910, under paragraph 189, Service Regulations.

Wertenbaker, C. P., surgeon, detail to represent the service at the meeting of the Seaboard Medical Association to be held in Kinston, N. C., Dec. 6-8, 1910, revoked on account of sickness.

Lavinder, C. H., P. A. surgeon, detail to represent the service at the meeting of the Seaboard Medical Association to be held in Kinston, N. C., Dec. 6-8, 1910, revoked on account of sickness.

Gwyn, M. K., P. A. surgeon, granted seventeen days' leave of absence from Dec. 24, 1910.

Creel, R. H., P. A. surgeon, relieved from duty in the bureau and directed to report to the director of the hygienic laboratory.

McKeon, F. H., P. A. surgeon, relieved from duty at Manila, P. I., and directed to proceed to San Francisco and wire arrival.

De Valin, Hugh, P. A. surgeon, directed to proceed to Chicago and report to the medical officer in command for temporary duty.

Ridlon, J. R., asst.-surg., granted fourteen days' leave of absence from Dec. 21, 1910.

Miscellany

Ehrlich's Instructions Concerning Salvarsan (606).—Under the date of Oct. 25, 1910, Dr. Ehrlich has issued a circular letter in which he gives his latest ideas as to the methods of administering "606." He says that over 40,000 ampullas of the preparation have been distributed and reports have been received concerning its use. These reports have pretty well settled the dose, indications and contraindications. It should not be used in cases of atrophy of the optic nerve, but may be applied in other syphilitic diseases of the eye, especially gummatous iritis, but should not be used in severe diseases of the nervous system or of the heart and blood-vessels. The first phase of the trial may, therefore, be considered as closed. We now begin the second period, which concerns the permanent results of the remedy. These will depend on a series of circumstances, especially the size of the dose and the method of application, and second, the nature of the disease. The permanent results will be greater, the more decided the first therapeutic impressions. This, naturally, increases with the size of the dose and the rapidity of absorption. From this standpoint, the most efficient methods are (1) intravenous injection; (2) intramuscular injection of an alkaline solution; (3) the markedly irritating acid injection, and (4) the so-called neutral emulsions. He considered that in the first phase the greatest freedom should be allowed to the experimenters in the choice of a method, as only in this way, by a comparison of results, could an idea of the relative value of the different methods be obtained quickly. But it has already been established that the methods most applied, either the intramuscular or subcutaneous injection of the neutral emulsion, have less value as far as permanent results are concerned. This may depend on the fact that it is more difficult to prepare these emulsions with absolute uniformity and minuteness of subdivision, which results in a variability in the rapidity of absorption; and in many instances the therapeutic effect by this method was not sufficiently intensive to secure in general the sterilization or destruction of the spirochete. The intravenous injection gives better results. The technic is simple and in a proper selection of cases is free from danger, and for many patients much more pleasant. There have been over 1,000 cases already treated by the intravenous method. As an intravenous injection, Alt injects at least 0.3 to 0.4 or 0.5 gm., some give still larger doses, 0.7 to 0.8 gm. The intravenous injection can be repeated after two or three weeks, according to the need of the case, if the curative effect of the first injection is not complete and the Wassermann reaction is still positive. So far, indications of a hypersusceptibility have not appeared, although in many instances intravenous injections have been employed two, three, four or five times. Ehrlich says that the reports that have reached him indicate that the intravenous method deserves prominence over the other methods, especially the subcutaneous. He does not overlook the fact that this method will meet certain technical difficulties in ordinary practice, still it is important in the interest of patients to secure at once the most effective treatment. The intravenous method is therefore recommended by Ehrlich, at least for hospitals and clinics. The things to be especially considered are the following: 1. The disease should be put under treatment as promptly and early as possible, as it generally occurs in robust young individuals. They should be treated with at least 0.5 intravenously. In addition, it would be advisable, in the interest of actual sterilization, to employ an energetic local treatment, extirpation, cauterization or some of the other methods used. 2. In diseases of the central nervous system and the circulatory apparatus, so far as these are really suited to treatment, the greatest caution is advised and small doses, 0.2 to 0.4, should be used, but whether in these cases the intravenous method does not deserve the preference over the forms of application heretofore used, has not yet been sufficiently determined. Ehrlich, therefore, advises that in the future, as far as possible, the intravenous injection should be used.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Legal Value of Vital Statistics

Mr. W. J. V. Deacon, statistician of the Kansas State Board of Health, in the *Journal of the Kansas Medical Society*, November, 1910, discusses vital statistics, with special reference to their legal and social value. As most discussions of this question relate to the medical and sanitary side of registration, this paper is especially deserving of attention by physicians. While too much cannot be said on the value of properly recorded and tabulated vital statistics as a means of "sanitary bookkeeping" and as a stimulus to hygienic reforms, it must be remembered that the recording by the state of births, deaths and marriages is of quite as much importance to the lawyer, the business man and the average citizen as it is to the sanitarian. Mr. Deacon lays special emphasis on the necessity of presenting the facts brought out by registration of vital statistics to the attention of the public and keeping these facts constantly in the foreground. He says:

"It has been said that vital statistics can make disease centers as obvious and as offensive as the smoking nuisance. They will not do this, however, unless they are advertised. The compilation of vital statistics as a matter of history is worse than useless and does not begin to furnish an adequate return for the time, money and effort put in their compilation. To be of real value, vital statistics must be a guide to our public health officials and to every public spirited physician, in the campaign against disease. That the collection and publication of vital statistics is of great importance is a well recognized fact. In international statistics, practically every well known European state is represented. In addition, I might mention such countries as New South Wales, Tasmania, New Zealand, Ceylon, Jamaica, Finland, Roumania, Bulgaria, Japan and Chili. The United States, as a whole, is not represented in international vital statistics."

Mr. Deacon gives three important reasons for recording births and deaths. These are: first, protection of the rights of the individual and of the community; second, the protection of the health and lives of the people; third, the knowledge of the movement of the population. After pointing out that statistical officers are usually under the direction of state or city boards of health and that, for this reason, the legal and social importance of vital statistics has been lost sight of, Mr. Deacon says:

"The interest of lawyers in this movement is generally because the very nature of their profession causes them to appreciate more quickly the disadvantages and financial hardships that individuals so often suffer, but this, like the interests of the physicians from a sanitary standpoint is not based alone on the professional interest of individual practitioners, though it is true that an orderly and authentic system of recording births and deaths would greatly facilitate legal procedure. The greatest benefit will result to the people themselves and not to any one profession."

Mr. Deacon gives seven provisions which should govern the registration of deaths:

1. Deaths must be registered immediately after their occurrence.
2. Certificates of death must be recorded.
3. Burial or removal permits are essential to the enforcement of the law.
4. Efficient local registrars are necessary.
5. The central registration office should have full control of the machinery and its rules should have the effect of law.
6. The transmission and preservation of returns should be provided for.
7. Penalties should be provided and enforced.

Mr. Deacon considers that one of the fundamental purposes of the proposed national department of health is the collection, compilation and use of vital statistics and repeats the three economic reasons given by Allen for the establishment of such a department. These are: first, to enable society to increase the percentage of exceptional men of each degree, many of whom are now lost through preventable accidents; and also to increase the total population; second, to lessen the cost of sickness; third, to decrease the amount spent on criminality that could be traced (if there were properly filed and reliable figures from which to draw conclusions) to overcrowded unwholesome and unhygienic environment.

In discussing the influence of vital statistics on social problems, he says:

"Whenever the term 'statistics' is applied to social facts it suggests action, social control of future contingencies, mastery of the facts whose actions are chronicled. The object of gathering social facts for tabulation is not to gather material for future historians, they are to be used in shaping future history. They are facts collected with a view to improving social vitality, to raising the standard of life and to eliminating permanently those forces known to be destructive to life. Unless they are used in this way they are of interest only to the historian. No city or state can afford to erect a statistical office to serve as a curiosity shop."

This portion of the paper concludes with an arraignment of Kansas which ought alone to be sufficient to secure the enactment of a proper registration law in that state at the next meeting of the legislature:

"Kansas, poor old Kansas! Bleeding Kansas! Bleeding money, wheat and corn at every pore. 'Tis said. A land of smiling sunshine, of winding streams, where you have but to tickle the soil to make it laugh a harvest. A land dotted with school houses and growing towns and villages, called cities by divine right of prophecy. A *land of* pigs given to adipose, of sleek cattle, of strong horses, of handsome women, of bouncing babies, of homely, rugged men. A land where no one dies except through accident or over eating. Poor, bleeding Kansas cannot afford to pay 25 cents to register those bouncing babies and, while for years they have duly registered their fine pigs, their cows and their horses at an expense of from 50 cents to $10.00 each, they deny to the future citizen, the potential fathers and mothers of this great republic, the right of registration, the establishment of their legal birthright, for the pitiful sum of 25 cents.

"'Have you a little fairy in your home?' If you have she is not registered No human eye can pierce the future and while you by study, industry and thrift may think to leave that 'fairy' far above the reach of the breakers of misfortune, who knows what may arise in the future to require that little one to prove herself your child, your heir and the right to exercise those sovereign rights of citizenship to which estate the little one has been born, and in which rights you to day think her secure

'The state owes to every citizen the right that the three principal events in the life of each of them shall be a matter of public record, and these three events are the birth, marriage and death This state owes it to you to maintain these records, a duty it has shamefully neglected"

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR JOHN H BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course]

Fifth Month—Second Weekly Meeting

I Hyperemias of the Skin

Erythema Hyperemicum Erythema caloricum, e solare, e venenatum, e ab igne, e. traumaticum Symptoms and treatment

Erythema Intertrigo Chafing

II Inflammations

Erythema Multiforme Etiology Symptoms Constitutional symptoms, visceral manifestations, varied lesions.

Erythema Nodosum· Etiology, symptoms

Erythema Scarlatinoides Symptoms and diagnosis

Pellagra Etiology Symptoms Disturbances of gastrointestinal and cerebrospinal systems Cutaneous lesions—three stages—congestion, thickening and pigmentation, atrophic thinning

Urticaria Etiology Symptoms Varied lesions Urticaria papulosa, u gigans, u bullosa, u hemorrhagica, u perstans, u factitia Treatment

Angioneurotic Edema Symptoms Diagnosis Treatment

Eczema Acute, subacute and chronic
- Eczema erythematosum, lesions, usual locations
- Eczema papulosum lesions, locations, course
- Eczema vesiculosum, lesions, locations, course
- Eczema pustulosum, lesions, locations
- Eczema rubrum and e squamosum, secondary conditions

Regional Eczema

Diagnosis Redness, papule, vesicle, or pustule, discharge, crusts and scales, thickening and infiltration, itching and burning Differentiate from scabies, herpes, dermatitis, impetigo contagiosa, sycosis, psoriasis, lichen planus

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Society Proceedings

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Nineteenth Annual Meeting, held at Richmond, Va , Oct 31–Nov 4, 1910

The President, Col Joseph K Weaver, N G , Pa , Norristown, in the Chair

Officers Elected

The list of officers elect was published in The Journal, November 5 page 1656 Milwaukee was selected as the place of meeting for 1911

Reports of Officers

Major Herbert A Arnold, N G , Pa treasurer, reported the largest number of paid up members in the history of the organization—1 445—and that the balance in his hands was $5,826 41, or $129 09 more than for the previous year

Major Charles Lynch, M C , U S Army, secretary and editor, explained that the loss in advertising receipts was due to the acceptance of no advertisements except those approved by the Council on Pharmacy and Chemistry of the American Medical Association

Department of Public Health

At the business meeting resolutions were adopted favoring the passage of Senate Bill 6049, now pending, or essentially similar legislation having for its object the establishment of a national department of health, of equal dignity and power with other departments of the government, having at its head a secretary of public health, a cabinet officer

Pay for Organized Militia

On motion of Col L Mervin Maus, M C , U S Army, a resolution was adopted asking Congress to provide that medical officers and members of the hospital corps of the organized militia receive an annual pay to the amount of 25 per cent of the active pay of their respective grades as provided by the pay tables of the United States Army and Navy, besides mileage while under orders, and directing the committee on legislation of the association to confer with the similar committee of the National Guard Association, and to represent the conditions as they relate to medical officers with a view of obtaining an increased rate of pay for them

Ethics, Scope and Prerogatives of Army Medical Officer

Col L Mervin Maus, M C , U S Army, discussed this subject, which is of interest alike to medical officers of the regular establishment and to those of the organized militia He outlined the advantages to be derived from the blending of the medical corps of the Army with the U S Public Health and Marine Hospital Service, which would bring under one executive, public health, general and special sanitation, quarantine, hospital organization and management, the care of the sick, property responsibility, examinations etc He considers early military training of paramount importance to the medical officer, who should at least have a thorough knowledge of the principles of discipline, military drill and the essentials of command The medical officer of to day must be a man of collegiate education or its equivalent, an accomplished physician, a skilful surgeon, an expert in diseases of the eye, ear, nose and throat, a master of obstetrics, gynecology and pediatrics, an alienist, a past master in military hygiene and sanitation, and a thorough student of military regulations and customs, and army life He must also be proficient in military law, to a certain degree in tactics, especially those relating to hospital corps and ambulance drills, he must understand the art of the architect and builder, the duties of judge advocate, quartermaster, commissary, paymaster, the command of hospitals, hospital ships and trains, ambulance companies and the multitudinous and varied duties connected with municipal administration in all of its complex branches Among the important duties delegated to the medical officer is that of sanitation, whereby the medical officer becomes the army sanitarian in name, if not altogether in function He is authorized to supervise the sanitation of the command to which he is attached and to recommend to the commanding officer such measures as he deems best for the health of all concerned Colonel Maus suggests the greater use of the special sanitary report, instead of waiting and allowing the continuance of an insanitary evil until the monthly report is made He urges that the recruitment of the army be placed in the hands of the medical corps, as the physical examination is the chief factor of the duties of the recruiting officer He also believes that retiring boards should consist entirely of medical officers, who, by reason of education and training, are the only officers in the service competent to pass an opinion as to the physical condition of officers brought before such boards The essayist does not approve of the term surgeon as a designation, preferring the more correct title of medical officer He suggests that the following designations be made official For an army in the field or a military tactical division or department, surgeon general, for a division, division surgeon general, for a brigade, brigade surgeon general, for a general hospital, field and in a proper selection of cases is free from danger, and for many patients much more pleasant. There have been over 1,000 cases already treated by the intravenous method. As an intravenous injection, Alt injects at least 0.3 to 0.4 or 0.5 gm., some give still larger doses, 0.7 to 0.8 gm. The intravenous injection can be repeated after two or three weeks, according to the need of the case, if the curative effect of the first injection is not complete and the Wassermann reaction is still positive. So far, indications of a hypersusceptibility have not appeared, although in many instances intravenous injections have been employed two, three, four or five times. Ehrlich says that the reports that have reached him indicate that the intravenous method deserves prominence over the other methods, especially the subcutaneous. He does not overlook the fact that this method will meet certain technical difficulties in ordinary practice, still it is important in the interest of patients to secure at once the most effective treatment. The *intravenous method is therefore recommended by Ehrlich, at least for hospitals and clinics.* The things to be especially considered are the following: 1. The disease should be put under treatment as promptly and early as possible, as it generally *occurs in robust young individuals.* They should be treated with at least 0.5 intravenously. In addition, it would be advisable, in the interest of actual sterilization, to employ an energetic local treatment, extirpation, cauterization or some of the other methods used. 2. In diseases of the central nervous system and the circulatory apparatus, so far as these are really suited to treatment, the greatest caution is advised and small doses, 0.2 to 0.4, should be used, but whether in these cases the intravenous method does not deserve the preference over the forms of application heretofore used, has not yet been sufficiently determined. Ehrlich, therefore, advises *that in the future*, as far as possible, the intravenous injection should be used.

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Fifth Month—Second Weekly Meeting

I. HYPEREMIAS OF THE SKIN

ERYTHEMA HYPEREMICUM: Erythema caloricum, e. solare, e. venenatum, e. ab igne, e. traumaticum. Symptoms and treatment.

ERYTHEMA INTERTRIGO: Chafing.

II. INFLAMMATIONS

ERYTHEMA MULTIFORME: Etiology. Symptoms: Constitutional symptoms, visceral manifestations, varied lesions.

ERYTHEMA NODOSUM: Etiology, symptoms.

ERYTHEMA SCARLATINOIDES: Symptoms and diagnosis.

PELLAGRA: Etiology. Symptoms: Disturbances of gastro-intestinal and cerebrospinal systems. Cutaneous lesions—three stages—congestion, thickening and pigmentation, atrophic thinning.

URTICARIA: Etiology. Symptoms. Varied lesions: Urticaria papulosa, u. gigans, u. bullosa, u. hemorrhagica, u. perstans, u. factitia. Treatment.

ANGIONEUROTIC EDEMA: Symptoms. Diagnosis. Treatment.

ECZEMA: Acute, subacute and chronic.
  Eczema erythematosum, lesions, usual locations.
  Eczema papulosum, lesions, locations, course.
  Eczema vesiculosum, lesions, locations, course.
  Eczema pustulosum, lesions, locations.
  Eczema rubrum and e. squamosum; secondary conditions.

REGIONAL ECZEMA.

DIAGNOSIS: Redness; papule, vesicle, or pustule; discharge; crusts and scales; thickening and infiltration; itching and burning. Differentiate from scabies, herpes, dermatitis, impetigo contagiosa, sycosis, psoriasis, lichen planus.

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Vaccine Therapy

Major Harlan Shoemaker, M.C. N. G., Pa., Philadelphia, detailed his experience with natural as compared with artificial vaccine therapy, from which he concluded that bacterial vaccines can be undertaken without fear of unpleasant sequelae because the reaction is of short duration, and consequently there is no danger of injury to a vital organ; because the reaction is not so great as in a natural vaccination or inoculation of living germs; because the surgeon inoculates many patients with innumerable living germs without unfavorable results, and because the bacterial vaccine is dead.

(To be continued)

CHICAGO MEDICAL SOCIETY

Regular Meeting, held Nov. 9, 1910

The President, Dr. Alexander Hugh Ferguson, in the Chair

The Ligation or Partial Extirpation of Exophthalmic Goiter

Dr. Charles H. Mayo, Rochester, Minn: There are two groups of cases of hyperthyroidism: first, the simple goiter without symptoms of hyperthyroidism; and, second, the group of cases in which the symptoms of hyperthyroidism constitute the main feature of the case. In cancer of the thyroid it is not uncommon to see marked hyperthyroidism—in fact, some cases have every symptom ordinarily classed as Graves' disease. As to treatment, from an operative standpoint, we will consider the operation of vessel ligation and one of partial extirpation of the gland. For the mild cases, or those seen early, is recommended the simple ligation of the vessels, nerves, and lymphatics at the upper pole, with a linen ligature. Following this procedure the reduction in the delivery and production of secretion seems to bring about that form of reversion of goiter toward the simple type, as demonstrated by MacCarty. The same treatment is indicated in the most advanced cases in which changes in the heart, liver, etc., have advanced to a most serious degree. In this group the improvement is very marked in all who recover from the operation, and the removal secondarily of the larger lobe and isthmus can be made with a marked degree of safety a few months later. Of the cases operated on by ligation who are below weight there is an average gain of 20 pounds in four months. The results from operations are about 70 per cent. cured, and the remainder greatly improved, although operated on at a time when serious and incurable conditions of other organs were present. The mortality for ligation of vessels is 3.7 per cent. The mortality in extirpation cases is 3.9 per cent. This includes the highest mortality of early work. During the past three years twelve patients have died without operation within the first eight days after their arrival in the city for operation, their morbid condition being too evident for surgical treatment at that time.

DISCUSSION

Dr. Arthur Dean Bevan: I believe that the theory of Möbius has been definitely proved to be true, that exophthalmic goiter and the symptoms resulting from this disease are due to the oversecretion of the gland, or possibly, at times, to an altered secretion, and I think Kocher has shown, basing his work on the theory of Möbius, that in order to cure exophthalmic goiter, it is our duty to diminish to approximately normal the internal secretion of the gland. How is this to be done, and at what time are we to resort to operative interference? I have had the same experience that Dr. Mayo has had in losing patints after trying to do too much. I remember three very sick patients I lost in whom I removed one entire lobe and part of another, and I am rather inclined to believe if I had adopted the plan of Kocher, I would have succeeded in some case in saving the patients' lives. I believe in the very bad cases we should ligate one or two thyroid arteries. As to the technic, Crile adopts a rather stealthy way, without any knowledge of the patient beforehand. Some morning he comes into the room and ligates one of the superior thyroid arteries. I have not much sympathy with Crile's method of doing these operations without the full knowledge of the patient. After listening to Dr. Crile's persuasive argument one day I tried it on an intelligent woman, and she never forgave me. I believe that in almost all cases ether is to be preferred as the anesthetic. In some very bad cases cocain may be used in the following way: about an hour before the operation give hypodermically ¼ grain morphin and 1/150 scopolamin; then 1/1,000 solution of cocain should be employed with a little epinephrin added to it.

The technic which I have adopted has been to make a little incision about an inch and a half in length parallel with the normal skin folds in the neck just at the upper border of the thyroid gland, just in front of the sternocleidomastoid. The incision is taken down to the deep fascia; then the sternocleidomastoid is drawn to the side; then the omohyoid passes right in front of the artery. There is this little piece of surgical anatomy which you should remember, and that is, the artery below the hyoid bone is internal to the carotid and the sternocleidomastoid. You find the large artery before seeing the pole of the gland itself. Then you follow that down to the pole. In many of the cases the mere ligation of the superior thyroid will suffice. In the more radical operation of the removal of one lobe of the gland the procedure should be the Kocher incision, and ether anesthesia, as a rule. I think we owe a great deal to Dr. Mayo for showing us that ether anesthesia is quite as safe in the hands of an expert, as I firmly believe it is, as cocain, in the resection of the goiter. The incision should divide the skin, superficial fascia and platysma, and should be very well dissected up, so that a large flap may be made and held by the assistant with a retractor. Then the superficial layer of the deep cervical fascia should be divided in the middle line, and the sterno-hyoid and sterno-thyroid muscles should be drawn to one side. I always ligate the superior thyroid en masse, and then the inferior thyroid. I do not believe we should ever remove more than a single lobe, and if there is a large amount of thyroid left on the opposite side I believe we should complete the operation by the ligation of the superior thyroid on that side. We owe a great deal to Möbius, Kocher and Mayo for teaching us the pathology and treatment of exophthalmic goiter. I believe the time has come when we can say to the patients who have come to us, especially if they come early, "You have exophthalmic goiter; you can be cured by surgical operation with much less danger than by leaving the condition to Nature."

Dr. J. Halpenny, Winnipeg, Manitoba: After a slight amount of experience in experimental work with the parathyroid glands, one is compelled to conclude that at the present time they are not in the practical arena of surgery at all. There are various assumptions regarding those glands that are not fully borne out by experimental work. The statement has been made by many that if the parathyroid glands are all removed, in every case death follows from acute tetany. One is unable to find that this always occurs. One is told that if the parathyroid glands alone be removed death follows more quickly than if the thyroid be also removed with the parathyroid glands. This is not true. Death comes on more quickly with the complete operation than when the surgeon removes the parathyroid glands alone. One finds that when the thyroids are removed and the parathyroids are left behind, there is a certain change in the histologic structure of the parathyroid, so that it takes on the structure of the thyroid. In one animal the lobes of the parathyroids and in another animal the lobes of the thyroids in the two instances appear very similar. This would lead one to conclude that these glands are so closely related that the one is able to take up the work of the other to a certain extent.

In the literature one finds that the argument is put forward that the parathyroid glands are there to check up the thyroid glands; that they are not entirely a different structure, except that they are to check up the thyroid glands, and the statement is made that the probable explanation is this: the thyroid gland normally accumulates or secretes some toxic substance which the parathyroid glands destroy. Remove the parathyroid glands and the toxic substance accumulates very rapidly, and death follows by tetany. The fact that the resultant tissue very closely approximates the tissue when the thyroid is left behind makes it appear that these two glands have work of the same kind to do.

Dr. D. W. Graham: I wish to emphasize the use of a general anesthetic instead of local anesthesia in operating for goiter, especially for the exophthalmic type.

Dr. L. Schooler, Des Moines, Iowa: I was very glad to hear the essayist emphasize one point, and I think it will inure to the benefit of a large number of patients, and that is that all cases of goiter are not surgical cases. I have seen operation in a good many cases of goiter that in my judgment were not surgical cases. Life-saving operations in advanced cases of goiter are bad surgery. Operating when the patient is moribund will not help the statistics in this class of cases any more than it will in any other.

Dr. Alexander Hugh Ferguson: I wish to ask Dr. Mayo to say something with reference to the class of cases in which thyroidism comes on every month or two or three months, and all the symptoms are directed toward the heart, and there is vomiting, with very little enlargement of the gland. There is no protrusion of the eyeballs, no tachycardia between times, no trembling of muscles, and no eye symptoms. I have had two or three such cases. One patient was supposed to die in an extreme condition of depression; he vomited, had diarrhea and became pulseless, but is slowly getting better. This patient was completely relieved by operation.

Dr. C. H. Mayo: If you deem it better to do a thyroidectomy to begin with, and a relapse takes place, with a little enlargement of the left lobe, then it is advisable to ligate the artery and lymphatics on that side, leaving one artery and three veins to supply the gland. If we have not cured the disease, it does not mean that we are through with the patient. If a relapse takes place, the patient can be made better by resection or ligation first, and following after that, after taking out the right lobe, and afterward ligating the superior vessels on the left side, I have resected a part of the left lobe in four cases, using a mattress suture. We have many more cases of exophthalmic goiter in this country than they have in Europe. The operations in this country that have produced tetany have been mostly secondary operations on the remaining lobe. No cancer patient has been cured if there was involvement of the lymphatic glands of the neck. The exophthalmic cases can be improved once or twice with the x-ray, and then comes the operation.

AMERICAN ASSOCIATION FOR THE STUDY AND PREVENTION OF INFANT MORTALITY

(Continued from page 2090)

First Annual Meeting, held at Baltimore, Nov. 9-11, 1910

Philanthropic Prevention of Infant Mortality

Dr. H. H. Hart, New York City: A study made by the Russell Sage Foundation, at the request of Mr. Homer Folks, revealed the fact that accurate information with reference to the mortality of infants under the care of philanthropic institutions is greatly needed as a basis for preventive effort. Very little accurate information exists, and that which is obtainable does not exist in such form as to permit intelligent comparison. Thirty institutions, including infant asylums and other institutions which care for infants under 2 years of age, were visited. Statistics were obtained partly from published reports and partly from figures furnished by the superintendents of institutions. Reports received from twenty-two institutions showed that out of 56,451 children under 2 years of age received by the institutions, 22,743 died, a mortality of 40.3 per cent. In many instances the rate was higher, varying from 50 to 70 per cent. In one instance the head of an infant asylum reported that during the past twenty years the death-rate among children under 2 years was 75 per cent. The statistical reports of boards of health and of state boards of charity afford no usable material. Institutional statistics were found to be misleading, because of the practice of treating each year as a unit, and basing the death-rate on the entire number of children cared for during the year. For instance, one institution which had fifty infants on hand at the beginning of the year received 100 and had fifty deaths, an apparent death-rate of 33⅓ per cent. If, however, the statistics were considered for a series of years, the rate would be found to be nearer 50 per cent. An intelligent study of infant mortality should deal with infants under 1 year. The inquiry referred to revealed the fact that not only was there a lack of uniformity of recording the personal and medical history of infants under care, but that no system that could be considered fairly complete had been perfected for recording such histories. The individual study of each case is required.

The following conclusions have been reached as a result of the study up to the present: First, there is room for improvement in the care of infants even by the most conscientious societies; second, there is a surprising amount of ignorance of their wards by societies. Only a few have an accurate history of their wards, and only a very few have proper medical examination on admission; third, nurses and superintendents of infant asylums are eager for information which will enable them to give adequate care to the infants placed in their charge.

DISCUSSION

Dr. W. C. Woodward, Washington, D. C.: Is there a record of mortality in the asylums?

Dr. S. Josephine Baker, New York: I have prepared a chart showing deaths in different localities in New York City, which brings out the fact that almost half of the infant mortality in the Borough of Manhattan is the institutional mortality. The real problem of the institution is not the breast-fed baby, but the bottle-fed baby. The boarding-out method of caring for babies should be elaborated more for the bottle-fed than the breast-fed baby. The bottle-fed baby boarded out in a home has a chance for life; 50 per cent. greater than if kept in an institution.

Dr. W. C. Woodward: Does any one know of a community in which an official or public register is kept of available wet nurses? The suggestion has been made to me by Dr. Skinner of the Columbia Hospital in Washington, that the frequency of applications for wet nurses by people of means makes it desirable that such a register be kept.

Mr. Walter Kruesi, Boston: The Boston Floating Hospital instituted a system of collecting maternal milk last summer from mothers who could spare it. The hospital offered 50 cents a quart, but the mothers refused to accept pay, preferring to contribute it for any child who needed it.

Mr. Robert W. Bruere, New York City: The question of wages enters largely into the care of infants. Ten per cent. of the mothers in the New York Lying-In Hospital come from families in which the weekly income is $5 or less. A study of the records of 6,000 confinements in 1909 showed that 1,700 were without employment when the child came; in 10 per cent. the income was $5 or less; only about 5 per cent. had an income of $15; and one-fifth of the families represented in the study had children of wage-earning age. I question Dr. L. K. Frankel's assertion that maternal insurance is not needed in America because husbands usually support their wives adequately.

Dr. L. K. Frankel: I object to a system of maternity insurance because I object to married women working. The average woman is doing her full duty to the community when she cares for the child she brought into the world. The economic conditions of the country should be readjusted so that the wage-earning power of the husband will be sufficient to enable him to support his family. The system of maternity insurance developed in Germany and Italy takes into account the problem of the illegitimate child.

Dr. Leonard D. Frescoln, Philadelphia: The Philadelphia General Hospital is in touch with various charity societies, and looks out for foundlings reported through these societies. Wet nurses are usually obtained from the obstetric or gynecologic wards of the City Hospital. The women are required to take their babies with them. Pay is usually from $6 to $8 a week.

Mrs. William Lowell Putnam, Boston: In Boston a plan has been followed of sending women out as wet nurses by day only; if for a longer time they take their own babies with them. The arrangement has made it possible to secure the services of a self-respecting class of married women.

Dr. C. O. Probst, Columbus, Ohio: There is a necessity for licensing boarding-out hospitals and places in which women go for confinement. Such a law is operative in Ohio. An examination is made of the place before the license is granted; no child born in such an institution can be placed anywhere in the state without the knowledge and consent of the authorities.

The Relation of Infant Welfare to the General Social Movement

Mr. Sherman C. Kingsley, Chicago: The relation of infant welfare work to the general social movement is about the same as that of the baby to the adult population. The baby makes the population, and out of neglected babyhood come the individuals that furnish the task of charity workers, of reform agencies and those engaged in the general social movement. Infant mortality and poverty go hand in hand. The black dots on the map of any city marking the location of baby funerals will also lead to the homes of the poor. The worker who becomes acquainted with these families discovers the mother who must go out to work to earn a living for herself and children, who has been deserted by her husband, who lives in insanitary tenements, who lives in a part of the city where the problem of poor milk is at its worst, where the alleys are foulest and flies are thickest. There is no problem affecting the home which does not rest finally with the greatest severity on the baby, and the worst effects often even before it is born. The problem of social disease and race responsibility is perhaps never appreciated so fully as when one sees its effects and reads its lesson in the baby victim. Every activity in behalf of human life receives new significance and meaning when the problem of the family and the home is approached with reference to its fitness as a place to welcome and foster infant life.

DISCUSSION

Miss C. Van Blarcom, New York: One point not touched on in the paper is the relation of the midwife problem to the production of blindness among infants. About 50 per cent. of the births in Chicago are attended by midwives; 75 per cent. in St. Louis. Midwives in America are not trained women; with a few exceptions they are not well supervised. It is as important that the midwife be trained as the doctor or the nurse. Consequences of lack of training are shown in diseases which follow the trail of the midwife. European midwives are carefully trained.

Mr. Edwin D. Solenberger, Philadelphia: Apropos of the relation of infant welfare work to the social movement, it is important that a definite plan of action be formulated for each community, with a certain part in it for each activity engaged in the campaign against infant mortality. A particular effort should be made under the department of health at the beginning of the hot weather to correlate and strengthen the agencies enlisted in the welfare campaign.

Dr. S. W. Newmayer, Philadelphia: The plan referred to by Mr. Solenberger is carried out in Philadelphia. All the various organizations engaged in infant welfare work are organized into one central bureau which forms a clearing-house for the work. It would be difficult to enforce laws prohibiting the employment of women before confinement. It might be practicable to have the women visited by visiting nurses, the expense of this care and instruction to be borne by small subscriptions from the various factories.

Mr. Louis Levin, Baltimore: A Jewish association in Baltimore which cares for women during their confinement sends trained care-takers into the homes while the mothers are incapacitated. Realizing the necessity for training the care-takers, arrangements were made in accordance with which the Hebrew Hospital agreed to open a training class for these workers. Instruction is simple, but enables care-takers to give intelligent attention to the needs of mother and child. The course is to cover one year. The present force of untrained care-takers receives $6 to $8 a week.

Miss C. Van Blarcom, New York City: The Central Midwives Board, appointed by act of Parliament in 1902, establishes standards for training schools. Examinations are required of pupil midwives trained in these schools. The training is analogous to that given to obstetric nurses in this country; the course includes elementary instruction in hygiene, anatomy and physiology.

Infants' Milk Depots and Infant Mortality

Mr. Wilbur C. Phillips, New York City: The milk depot is the fulcrum on which rests the lever of the situation—the instrument through which medical, social, educational and philanthropic prevention effect their purpose and achieve success. Operated as it should be, it is more than a depot from which milk is distributed. It is an educational center, a district branch for the dispensation of relief, and an indispensable coordinating unit between nurses, physicians, clinics, dispensaries, hospitals and various philanthropic institutions which concern themselves directly with the welfare of the child. We should have classes for mothers in infant hygiene; periodical consultations under the direction of physicians for weighing and examining the babies, and follow-up work in the home by visiting nurses. If infant mortality is to be prevented and not cured, the home must be the crucial place of attack. The work of infants' milk depots must be coordinate with the hospitals, clinics, dispensaries, floating hospitals, fresh-air homes, day nurseries and all the agencies which are interested in the baby problem. Before birth the depot nurse, through her intimate knowledge of these agencies, will assume the responsibility of preparing mothers for a successful delivery. After the baby is born she will continue to look after it and will place at the mother's disposal every known means of bringing it to strong and healthy childhood. The milk depot is the natural coordinating unit in all this work because of its proximity to the home. In the last analysis, infant mortality is to be solved, not by philanthropy or by institutions, or by the medical profession, or by the state, but by intelligent motherhood.

The assistance and supervision exercised over mothers from the period before confinement until the child is weaned should be as uniform as possible with respect to instruction given and methods taught. Probably some day the instructional work to prevent infant mortality, which at present is being paid for either by philanthropy or given gratuitously by physicians, will be taken over by our cities or towns. Already in New York City we have seen organized the Bureau of Child Hygiene, with the great corps of nurses working at least during the summer among the babies, and it is not unreasonable to expect this work in New York City and elsewhere to continue permanently throughout the year.

DISCUSSION

Dr. L. T. Royster, Norfolk, Va.: The educational features of the infants' milk depots represent the most important aspects of the work. We should teach mothers to modify the milk in their own homes. I favor the teaching of the essentials of infant hygiene and infant feeding in the elementary grades of the public schools.

Dr. S. Josephine Baker, New York: The Little Mothers' Leagues in New York City are voluntary organizations formed among the girls of 12 or over in the public schools in sections of the city where the older children have much of the care of their younger brothers and sisters. Meetings are held weekly, the doctor and nurse of the school serving as honorary president and vice-president. Children are given practical instruction in the preparation of food for infants; they are taught to modify milk, to bathe the baby, and other simple fundamental rules of infant hygiene and home sanitation. Over 22,000 members are enrolled in the league.

Dr. Ira Wile, New York: Two points should be emphasized in a consideration of milk depots. First, the possibilities of caring for the breast-fed baby for whom mixed feeding has to be resorted to when the mother is employed during the day. The breast-fed baby is more welcome than the one entirely artificially fed. Second, milk stations are for well children, not sick ones; they offer means of keeping babies well, not of curing them when they are ill. The third function of the milk station is to teach the ante-natal care of the breasts. Instruction should also be given in personal and household hygiene, and in dietetics. Classes for mothers are a potent means of reducing infant mortality.

Dr. J. H. Mason Knox, Jr., Baltimore: The Maryland Association for Study and Prevention of Infant Mortality is a mother's relief society and milk depot combined. The association employs a physician to conduct classes for mothers, an obstetrician, a staff of trained nurses, and a social worker. The society is doing much toward combating the evils of the midwife problem.

Miss Lydia Holman, North Carolina: I am a visiting nurse in the mountains of North Carolina. The baby in the isolated communities has no chance, and my work was begun in order to secure more of a chance for mothers and babies in the mountainous districts. During eight years I have delivered 308 women. I hope that the plan for the extension of visiting nursing, with the possibilities it offers in the teaching of hygiene and home sanitation, will eventually reach every rural community in the United States.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Regular Meeting, held Nov. 9, 1910

The President, Dr. Henry Leffmann, in the Chair

TO WHAT EXTENT, IF AT ALL, SHALL THE PRACTITIONER REGARD INTESTINAL ANTISEPSIS AS FEASIBLE?

The Scientific Evidence of the Possibility of Influencing Bacterial Growth in the Intestines

Dr. Horatio C. Wood, Jr.: There is no disinfectant strong enough, in doses which would be safe, to destroy the viability of the bacteria in a quantity of fluid equal to that of the bowel. For such an effect it would require about an ounce of phenol or 5 grains of corrosive sublimate. On the other hand, it is theoretically possible to exercise an antiseptic influence, that is, to restrain the development of bacteria. For this purpose, in a quantity of culture medium equal to the contents of the intestine, it would require: phenol, 3 drams; creosote, 30 minims; solution of formaldehyd, 13 minims; betanaphthol, about 9 grains. These figures do not take into consideration the possibility of the absorption. A critical examination of the experimental data as to the effect of chemical agents on the intestinal flora confirms this conclusion, and shows that it is at least within the bounds of hope to reduce the number of bacteria in the bowel with antiseptic agents. Present evidence shows that the official drug from which the most is to be expected is probably betanaphthol as it is the one in which the margin between safe dose and antiseptic power is the largest, with the exception of formaldehyd, and also that it is slowly absorbed and therefore likely to remain in the bowel long enough to do good.

Intestinal Antisepsis

Dr. Albert E. Roussel: The beginning of intestinal antisepsis may be traced back to 1872 when Selmi discovered in the products of putrefaction certain substances resembling alkaloids which he called ptomains. The phenomenon that the products of bacterial life are lessened after the administration of intestinal antiseptics indicates that their antiseptic effect is a matter of fact rather than of conjecture, since bacterial cultures do not tend to spontaneous cessation of growth even in so fertile a field as the intestinal tract. Either the intestinal antiseptics act by their own germicidal effect, or they stimulate the formation of organic substances that have the same effect. The contents of the intestinal tract have little effect in neutralizing the chemical antiseptics. A point of particular importance is not to confuse the medical conception of antisepsis with the surgical one of asepsis. Of my typhoid fever cases in the Howard Hospital by far the greater number have been treated with intestinal antiseptics. The mortality has been 4⅓ per cent.

Intestinal Antiseptics in Childhood

Dr. Alfred Hand, Jr.: Strictly speaking, our aim should be not to retard the growth of microorganisms in the intestinal tract but to kill those germs that are causing trouble. In a consideration of the intestinal flora it is well to note the captions given by Moro that in health the intestinal flora depend on the kind of food taken by the infant, a diet rich in starch favoring the development of the fermenting saccharolytes, while food rich in albumin favors the growth of the putrefying proteolytes, and as Escherich pointed out, the possibility therefore exists of restraining intestinal putrefaction by giving starch plentifully; for fermentation and putrefaction cannot go on in the same medium. We must consider the patient first of all and do him no harm while ridding the intestine of the hostile germs. We should strive for the prevention of enteritis by avoiding the introduction of the disease producing germs. Clean milk is a necessity, and it is safer for at least nine months of the year in this climate to pasteurize the milk taken by infants and children. If the disease has gained a foothold, milk and all milk foods must be absolutely forbidden until the discharges have lost all evidences of inflammatory processes, and all remains of milk in the alimentary canal must be removed by purgation or colonic irrigation. The patient is now in the stage when the use of intestinal antiseptics may be considered. I regard thymol, the naphthol derivatives and phenyl salicylate, or salol, as too irritating. A comparison of two series of cases, one treated solely by the starvation plan, and one with bismuth salicylate, showed net results decidedly in favor of the drug. The drug seemed to have undoubted disinfectant properties which Steele's careful investigation proved mathematically. I would sound a word of warning in the use of calomel in these cases. The more I see of its use the more disinclined I am to employ it. To have any value, the bichlorid, into which it is converted, must be present in such amount as would seem to be irritant if not positively toxic.

Intestinal Antiseptics in Pregnant Women

Dr. Edward P. Davis: Advanced pregnancy renders inevitable intestinal stasis from pressure. The result of this stasis is an effort on the part of Nature to protect the woman, and perforation may threaten. Constipation of pregnancy demands attention, and the pregnant woman must be considered as inevitably constipated. Our effort must be toward providing a diet which shall be poor in the materials tending to putrefaction. I have seen as much good result from the use of compound licorice powder as from any other remedy. Attention must also be paid to maintaining muscular tonicity. Personally, I should be unwilling to give any drugs in the doses recommended in the treatment of the pregnant woman because of the danger to the kidneys.

DISCUSSION

Dr. J. P. Crozer Griffith: I think it most important that we study the chemistry of foods, withdrawing that food which does the harm. The modification of the food is the important element both before and after the development of disease.

Dr. James W. Walk: My own feeling in regard to intestinal antisepsis is that we are not sure that any dose which is safe to use does a great deal of good, although there may be a possibility. Of great importance is the washing out of the intestine in a rational way. Generally the free use of water by the mouth is of advantage.

Dr. Henry Leffmann: In this connection the symbiotic relation of bacteria may well be considered. Bacteria in many cases act not singly but by combination.

State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, January 10. Chairman, Dr. W. H. Sanders, Montgomery.

Arizona: Phoenix, January 3 4. Sec., Dr. Ancil Martin

Colorado: Denver, January 3. Sec, Dr S D. Van Meter, 1723 Tremont Place, Denver.

District of Columbia: The District Bldg, Washington, January 10 Sec., Dr. George C Ober, 125 B St., S-E

Illinois. Coliseum Annex, Chicago, January 11-13 Sec, Dr J. A. Egan, Springfield

Indiana 120 State House, Indianapolis, January 10 12 Sec, Dr W. T. Gott

Minnesota: State University, Minneapolis, January 3 Sec, Dr. W S Fullerton, 214 American National Bank Bldg, St Paul

New Hampshire: State House, Concord, January 3-4 Regent, Mr Henry C. Morrison

New Mexico: Santa Fé, January 9-10 Sec, Dr J. A Massie

New York: New York City, Albany, Syracuse and Buffalo, January 31 to February 3. Chief of Examinations Division, Mr Charles F Wheelock, Albany.

North Dakota: Grand Forks, January 3 5 Sec, Dr. H M Wheeler

Oklahoma: McAlester, January 3 Sec, Dr. Frank P. Davis, Enid

Oregon: Portland, January 3 Sec, Dr E B McDaniel, Electric Building.

Rhode Island State House, Providence, January 5 Sec, Dr Gardner T Swarts

South Dakota: Aberdeen, January 11-12. Sec., Dr F. W. Freyberg, Mitchell

Vermont: Montpelier, January 10 12 Sec, Dr W. Scott Nay, Underhill

Virginia: Lynchburg, December 20 23 Sec, Dr R S Martin, Stuart.

Washington: Spokane, January 3. Sec, Dr. F. P. Witter, 207 Traders' Block

Wisconsin Milwaukee, January 10-12 Sec, Dr. John M Beffel, 3200 Clybourn St

Kentucky July Report

Dr. J. N. McCormack, Secretary of the Kentucky State Board of Health, reports the written examination held at Louisville, July 5-7, 1910. The number of subjects examined in was ten; percentage required to pass, 70, and not less than 60 in any one branch. The total number of candidates examined was 133, of whom 101 passed and thirty two failed, including two osteopaths. The following colleges were represented:

PASSED

College	Year Grad	Total No Examined.
Howard University, Washington, D C	(1890)	1
College of Medicine and Surgery, Chicago	(1910)	1
Univ of Louisville (1903) (1908) (1909) 84	(1910)	87
Johns Hopkins University	(1905)	1
St Louis University	(1910)	1
St Louis Coll of Phys and Surg	(1893)	1
Medical College of Ohio	(1903)	1
Eclectic Medical Institute, Cincinnati	(1907)	1
Ohio Miami Medical College	(1910)	3
University of Tennessee	(1910)	2
Vanderbilt University (1882)	(1910)	2

FAILED

College	Year Grad	Total No Examined.
College of Physicians and Surgeons, Chicago	(1910)	1
University of Louisville (1909)* (1909)† (15, 1910).		17
Louisville National Medical College	(1910)	1
Southwestern Homeopathic Medical College	(1910)	1
Kentucky School of Medicine	(1908)†	1
Louisville and Hospital Medical College (1908)* (1908)† (2 1908)‡ (1908)**		5
Edwards Medical College††	(1889)	1
Meharry Medical College (1908)*	(2, 1910)	3

* Second examination
† Third examination
‡ Fourth examination
** Fifth examination
†† An official statement says that no college by this name was chartered in the State of New York

Georgia Homeopathic October Report

Dr. R. E. Hinman, secretary of the Homeopathic Board of Medical Examiners of Georgia, reports that at the meeting held in Atlanta, October 3, 1910, two candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
Hahnemann Med College and Hospital, Chicago	(1890)	Indiana
New York Homeo. Medical College and Hospital	(1906)	New York

Idaho October Report

Dr. O. J. Allen, Secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Boise, October 4-5, 1910. The number of subjects examined in was twelve; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was thirty-four, of whom twenty-three passed and eleven failed. The following colleges were represented:

PASSED

College	Year Grad	Per Cent.
Northwestern University Medical School (1897) 81; (1900) 80; (1907) 87; (1909) 79, 84		
Hahnemann Medical College and Hospital, Chicago	(1908)	84
Rush Medical College.	(1907)	82
Chicago College of Medicine and Surgery	(1908)	77
College of Physicians and Surgeons, Chicago	(1906)	76
University of Louisville	(1910)	79
University of Iowa, Homeopathic College	(1910)	84
Baltimore Medical College	(1908)	83
	(1905)	76
...ge of Med and Surg	(1908)	77
Homeopathic Dept.	(1907	83
(1905) 77;	(1910)	79
University of Nebraska	(1903)	76
Medico Chirurgical College, Philadelphia	(1910)	75
Jefferson Medical College	(1909)	83
University of Pennsylvania	(1907)	82
University of Nashville	(1902)	76
University of Toronto, Ontario	(1901)	76

FAILED

College	Year Grad	Per Cent.
Illinois Medical College	(1901)	68
College of Phys and Surgs, Chicago...(1909) 72;	(1910)	72
Chicago College of Medicine and Surgery	(1909)	63
State University of Iowa, Coll of Med (1898) 64;	(1910)	73
Sioux City College of Medicine	(1905)	70
Drake University	(1907)	70
Western Eclectic College of Medicine and Surgery	(1909)	73
University of Missouri	(1908)	71
Memphis Hospital Medical College	(1898)	22

The following questions were asked:

ANATOMY

1 Describe the most characteristic difference in the male and female skeletons 2 Describe the levator ani muscle 3 Give relations of important structures in axilla. 4 Rectus abdominis muscle—origin, insertion, sheath, description of muscle, actions 5 Locate spleen, celiac axis, astragalus, liver outlines, Scarpa's triangle, incus, Haversian canals, parovarium, urachus, falx cerebri

PATHOLOGY

1 Describe the process of infection [illegible] phagocytosis 2 Describe the process of [illegible] Describe the process of pigmentation, of [illegible] suppurative inflammation, diphtheric inflammation 5 Describe the structure of a sarcoma; name types of sarcomata 6 Give pathologic lesions of lobar pneumonia and of capillary bronchitis 7 Describe the structure of a carcinoma; name the principal varieties of carcinomata. 8 Describe the process of primary healing; of secondary healing 9 Give the pathologic lesions of acute myelitis, of acute spinal meningitis, and acute anterior poliomyelitis 10 Describe the lesions of chronic parenchymatous nephritis and chronic interstitial nephritis

CHEMISTRY AND TOXICOLOGY

1 Mention four official lead preparations and give their chemical formulas 2 Mention two sources of salicylic acid and describe the action and compound formed when combined with bicarbonate of soda 3 Give Latin name, chemical formula and mode of preparation of yellow prussiate of potash (*b*) Give process for making cyanid of potash (*c*) What is red prussiate of potash? 4 Give symbols and atomic weight of (*a*) hydrogen, (*b*) oxygen, (*c*) silver, (*d*) lead 5 Give full official title and chemical formula of tartar emetic 6 What is the source of phosphorus, (*a*) pilocarpin, (*b*) saccharin, (*c*) with antidotes for the first two? 7. How many minims of Megendie's solution are necessary to represent ¼ grain of morphin? 8 What do you understand by corrosive poison? How soon after the poison is taken will symptoms follow? 9. Explain the action of potassium permanganate and tannic acid as an antidote for opium. 10 What is the difference between sulphids, sulphites and sulphates?

PHYSIOLOGY

1 What effect is produced on the heart's action by stimulation of the cardio inhibitory center? By stimulation of the pneumogastric nerve? 2 Describe the glands and villi of the intestines 3 Describe the digestion of a meal of beefsteak and potatoes 4. Describe the process of absorption by the blood vessels and by the lymphatics. 5 What is the effect of an excessive meat diet? 6 Name eight secretions and describe the functions of each 7 Define metabolism, anabolism, catabolism What are the objects of metabolism? 8 What are the functions of the pneumogastric nerve? 9. Describe the seminal fluid Through what structures does it pass? 10. What are the sources of animal heat? How is normal body temperature regulated?

HISTOLOGY

1 Mention methods of cell division, giving examples 2 From what primary layer is the kidney developed? nails? bone? muscle? epithelium of bladder? 3 Mention three varieties of cartilage and give example of each 4 Describe the structure of the uterus 5 Mention five ductless glands.

HYGIENE

1. Admitting that personal infection is the chief means by which diphtheria is carried from place to place, what meteorologic conditions have invariably preceded the most extensive epidemics of that disease? 2. How much linear wall space and how much air space per bed should be available in a ward for contagious diseases? How often should the air be changed? 3. What is meant by the "propulsion" or "plenum" method of ventilation for hospitals, and what are its good and bad points? 4. How high a temperature is required to expel the alcohol from yeast bread? (a) What is the temperature of the baker's oven? (b) Is the loaf effectually sterilized in the baking? 5. What effect has the temperate use of alcoholic spirits on the general health? (a) So used, what is the principal source of elimination? 6. What benefits are derived from the use of tea and coffee and how should these beverages be prepared to obtain healthful results? 7. What are the antiscorbutic properties of potatoes? 8. In changing from extremes of heat to cold, or the reverse, how does the body conserve its forces? 9. What has been the influence of sewage irrigation, or farming, on the general health of those living on the land or engaged in the work? 10. Name the principal methods for the disposal of excreta and sewage.

OBSTETRICS

1. Give the names of the bones which constitute the pelvis and give the diameters at the superior strait. 2. Give the diagnostic signs of pregnancy. 3. Give the etiology, symptomatology and treatment of puerperal eclampsia. 4. Describe the treatment for adherent placenta. 5. Give the diagnosis and treatment for placenta prævia. 6. Give the indications for the induction of abortion. 7. Describe the mechanism of an L. O. A. presentation. 8. Describe the treatment for puerperal infection. 9. Give the diagnostic points of an extrauterine pregnancy. 10. Give the etiology, symptomatology and treatment of mammary abscess.

GYNECOLOGY

1. Give the symptoms, objective and subjective, of uterine anteversion and retroversion. 2. Give definition, pathologic changes, causes and symptoms of senile endometritis. 3. Classify uterine fibroids as to location and differentiate between a submucous and interstitial tumor. 4. Tabulate points of difference between chancre and chancroid on the external genitals of the female. 5. Name the different situations in which hernia of the ovary has been found, and state when palliative treatment is indicated and when radical treatment. 6. Give the indications, action and technic for the intrauterine douche. 7. Tabulate diagnostic points between an inverted uterus and a uterine polypus. 8. Tabulate clinical history (only) of ascites and ovarian cyst. 9. Define subinvolution of the uterus and describe the pathologic changes which are coexistent in the pelvic organs. 10. What are the indications for treatment in case of gonorrheal infection of the endometrium?

DIAGNOSIS

1. Describe the temperature curve and give the diagnostic points in a typical case of typhoid fever. 2. Describe a test for the demonstration of the *Bacillus tuberculosis*. 3. Give the symptoms and physical signs of a right-sided lobar pneumonia. 4. Differentiate between rheumatic fever, pyemia with suppurative arthritis and gonorrheal arthritis. 5. Differentiate between carcinoma of the stomach and gastric ulcer. 6. Give the symptomatology and diagnosis of exophthalmic goiter. 7. Describe the symptoms of rachitis. 8. Describe the urinary findings in diabetes mellitus and chronic interstitial nephritis. 9. Differentiate between the comas of apoplexy, hysteria, alcoholism and uremia. 10. Differentiate between measles and scarlet fever.

PRACTICE OF MEDICINE

1. Give the etiology and symptoms of obstruction of the ductus communis choledochus. 2. Give the etiology and symptoms of diabetes insipidus. 3. Give the etiology and symptoms of peptic ulcer of the stomach. What special symptoms would suggest ulcer of the duodenum? 4. Describe a pancreatic crisis. Give the symptoms of acute pancreatitis. 5. Give the etiology, lesions, symptoms and prognosis of Addison's disease. 6. What is the etiology of cretinism, its lesions, symptoms and prognosis? 7. Give the causes, lesions and symptoms of perinephritic abscess. 8. What are the symptoms of acute anterior poliomyelitis? 9. Give the causes of hematuria. How may the source of the blood be inferred? 10. Describe the symptoms and course of pseudoleukemia.

SURGERY

[illegible] classification, symptoms, pathology, [illegible] conditions caused by disturbances of [illegible] nost dependable in closing openings in abdominal hernias? 4. What is acromegaly? Opsonin? Phagocytosis? Dermoid? Anaphylaxis? 5. Severe crushing injury of foot. Expectant treatment? Indication for amputation? Give technic of any classical amputation of foot. 6. Carcinoma of the breast. Give diagnosis and technic of operation. 7. Give diagnosis and treatment of tuberculous disease of the hip-joint. 8. Give technic of gastro-enterostomy. 9. What is the Fowler position? Bier treatment? Pott's disease? Wassermann reaction? Murphy method of proctoclysis? 10. Differentiate cholelithiasis.

MATERIA MEDICA AND THERAPEUTICS

1. What is an alkaloid? A glucosid? A resin? A gum? 2. What is the active principle of nux vomica? Mandrake? Aloes? Jaborandi? Belladonna? Give dose of each? 3. Senna: Mention the several varieties Where is it found? What part of the plant is used? What are its medicinal properties? 4. What is the alkaloidal strength of gum opium? Of cinchona bark? 5. What is the common name of staphisagria? What are its therapeutic uses? 6. Give the physiologic action of ergot and name the conditions that indicate its use in labor, and the contra-indications? 7. What are the advantages in the use of chloroform as an anesthetic, and what are the signs indicative of danger in the patient? 8. Explain how antitoxin causes immunity and effects a cure, and the methods of administration as a prophylactic and curative agent. 9. What is cumulative action? Name one drug that has this tendency and give symptoms of such action. Explain the constipating action of opium.

Book Notices

INNERE SEKRETION. Ihre physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Von Dr. Artur Biedl, Wien. Mit einem Vorwort von Dr. R. Paltauf, Wien. Cloth. Price, $5.50. Pp. 538. Berlin: Urban and Schwarzenberg; Rebman Co., New York American Agents, 1910.

In this valuable book the author aims to give and gives with complete success, a connected, comprehensive, well-considered and critical presentation of our knowledge of internal secretions.

In a short general part there is traced briefly the development of the ideas of neural and humoral correlation of organs up to the definite establishment by Claude Bernard and Brown-Séquard of the conception of internal secretions. This conception is then defined and its limits drawn, the origin and modes of action of hormones outlined, and the methods and materials used by investigators in developing our knowledge of internal secretions detailed.

In the special part, which constitutes the bulk of the book, the author takes up the thyroid apparatus, the thymus, the adrenal systems, the hypophysis, the pineal gland, the internal secretions of the reproductive organs, of the pancreas, the gastric and the intestinal mucous membranes, and of the kidneys.

In the case of the ductless glands, the development, the human and comparative anatomy, the physiology and physiological chemistry, the pathology, spontaneous as well as experimental, the effects of removal, and the therapeutic relations are fully considered. In each case the development of the knowledge is set forth in an interesting manner. In connection with the adrenals the presentation of the complex embryology and anatomy and of the mode and range of action of adrenalin is furthered materially by means of tabular summaries. The author, himself an active investigator in the fields in question, commands all divisions of the very extensive literature completely. The discussions of moot questions are marked by keen judgment; the difficulties in the way of final opinions are fully stated; and the author carefully avoids further complications by the introduction and advocacy of unnecessary hypotheses. The bibliography, which is not claimed to be complete in any sense, covers 180 pages, and it may be said that it covers the most important literature very well.

There are no illustrations and as the title indicates no attempt is made to discuss from the practical point of view the clinical course, the diagnosis or the treatment of diseases due to disturbances of internal secretions.

Biedl's book will be of great help to students and investigators and is a welcome addition to our literature.

Professor Paltauf writes an interesting preface.

CHILDREN'S DIET IN HOME AND SCHOOL. With Classified Recipes and Menus. A Reference Book for Parents, Nurses, Teachers, Women's Clubs and Physicians. By Louise E. Hogan, Editor of "The Children's Library." Cloth. Price, 75 cents net. Pp. 128. New York: Doubleday, Page & Co., 1910.

This attractive appearing little volume is one of a type that is unfortunately not rare and which, therefore, deserves more comment than it would in itself warrant. The author of this "reference book for parents, nurses, teachers, women's clubs and physicians" is a lay woman who is also editor of "The Children's Library" and author of "Stories for Children," "How to Feed Children," "The Education and Amusement of Children," etc. A number of pages of this book are devoted to infant-feeding and these best illustrate the point here emphasized. This field that the pediatrician of wide experience and profound training goes into with fear and uncertainty, the author enters as calmly as if she were telling a fairy tale to a child. Only a direct quotation can fully convey this ingenuousness. We are told: "Milk prepared with Fairchild's peptogenic milk powder may be used as a substitute without fear during the whole period of early bottle feeding and weaning. An actual study was made by Fairchild of cow's milk and of human milk, and by certain definite stated methods the former was brought to closely resemble human milk. Certainly science need go no further in its search for a suitable food for an infant deprived of its natural supply than to provide a substitute which is recognized as ore resembling nature by those who are supposed to know, hence mothers who wish to follow Nature's laws have here an opportunity to do so A useful little 'red letter' circular of four pages gives in a brief form all the directions necessary in both ordinary and unusual cases"

How simple, and withal how comprehensive! The science and art of infant feeding, normal and abnormal, that has been the storm center of pediatric discussion for decades, reduced to four 'red letter" pages advertising a patented baby food! The strange thing is not that the author believes all this, for she has evidently read certain advertisements very carefully and they read convincingly, but that an intelligent layman should know so little about infant feeding as to undertake to write about it in a book for physicians, or, for that matter, for parents Further comment would be unkind, for the author is evidently earnest and sincere Only a sense of duty has prompted the foregoing comments Such books are distinctly pernicious, because to the uninitiated they bear the stamp of authority.

A Manual of Chemistry Theoretical and Practical Inorganic and Organic Adapted to the Requirements of Students of Medicine By Arthur P Luff M D Physician to St Mary's Hospital and Hugh C H Candy B A Lecturer on Chemistry in the London Hospital Medical College *Cloth Price $1 75 Pp 622, with 46 illustrations* Chicago Chicago Medical *Book Co*, 1910

This is a complete manual of chemistry for medical students in a small, compact and convenient volume The book covers the usual ground gone over in medical colleges and in addition material intended for such students as may expect to take examinations requiring knowledge regarding the testing of compounds This is especially noticeable in Part II, in which the technic for gas analysis is given, which is required in some examinations in England, but which in this country is entirely unnecessary The work also goes further in physical chemistry than usual The book may be considered very complete as a regular text for college students but appears to go into details which are unpractical for medical students

Mentally Deficient Children Their Treatment and Training By G E Shuttleworth B A M D Medical Examiner of Defective Children to the Willesden Education Committee, and formerly to the School Board for London etc and W A Potts, B A, M D Consulting Medical Officer National Association for the Feeble Minded etc Cloth Price $2 net Pp 236 with illustrations Philadelphia P Blakiston's Son & Co, 1910

The book devotes little space to pathology, but enters fully into the clinical features of mental deficiency, beginning with an interesting historical summary of the treatment of defective children The authors lay greatest stress on the treatment, mental, moral, and especially industrial, etiology, classification, and prognosis are treated at length The book can be commended to the physician as a broad, sympathetic and thorough discussion of this important subject

The Refractive and Motor Mechanism of the Eye By William N Souter, M D Associate Ophthalmologist Episcopal Eye, Ear and Throat Hospital, Washington, D C *Cloth Price, $2 Pp 347,* with 148 illustrations Philadelphia The Keystone Publishing Co, 1910

The author gives a commendable exposition of the mechanics and physics of optics and of the refractive and motor mechanism of the eye with reference to the correction of its visual defects by lenses and nerve tract and muscle exercises *Though* elementary in character, the book gives a sufficiently full and clear explanation to aid the student or physician in acquiring a practical knowledge of the subject An appendix contains algebraic formulas to elucidate the various optical problems The book is well illustrated

Treatise on Diseases of the Skin For the Use of Advanced Students and Practitioners By Henry W Stelwagon M D, Professor of Dermatology in the Jefferson Medical College Phila Sixth Edition Cloth Price, $6 net Pp 1195, with 323 illustrations Philadelphia W B Saunders Co, 1910

This work in its various editions has received such wide approval from the profession that it has become one of the standard works on diseases of the skin No further word is needed in regard to it than to say that in this edition it has been revised and many new subjects, new treatments and new illustrations included As reflected in new editions in other branches of medicine, the increased interest in tropical diseases in recent years has brought forth a number of new skin affections, which are described for the first time.

Index Catalogue of the Library of the Surgeon General's Office, United States Army Authors and Subjects Second Series Vol XV S—Skin Grafting Cloth Pp 777. Washington Government Printing Office, 1910

The fifteenth volume of the second series of this index catalogue contains 8,804 author titles, representing 4 688 volumes and 7,460 pamphlets, together with 3,616 subject-titles of separate books and pamphlets and 28,328 titles of articles in periodicals

Medicolegal

Admissible Opinion Evidence Where Insanity is the Defense to Crime

The Supreme Court of Oregon holds, in the homicide case of State vs Roselair (109 Pac R 865), where the special defense was insanity, that it was not error to permit a medical expert, who made a personal examination of the defendant two or three days after the homicide, and observed his mental condition, to answer the question, propounded by *the district attorney 'What would you say as to whether* or not he knew right from wrong, and appreciated the consequences of his acts and the nature and quality of his acts?"

The court says that the line of demarcation between sanity and insanity is so indistinct, in some instances, that it is difficult even for a physician to determine them accurately It is also perplexing for a medical expert to explain the extent of mental infirmity, or to elucidate the degree of intellectual strength so that a person unacquainted therewith may gain a correct idea of the capacity or responsibility of a person whose particular act is the subject of judicial inquiry In order, therefore, to adapt the language of a witness to the understanding of men of ordinary intelligence, courts have permitted answers to be given which would seem almost to trench on the issue that the jury were called on to determine It must be admitted that a conflict of judicial utterance exists in respect to this manner of proving a relevant fact But this court believes that the rule adverted to, though founded in necessity is fortified by reason and supported by authority Thus inquiries calling for opinions respecting the capability of a person charged with the commission of a crime, to distinguish between right and wrong have been permitted to be answered by witnesses called for that purpose

The rule is well settled that a medical expert who has made a personal examination of another, for the purpose of determining his capacity to execute a contract, or his responsibility for the commission of a crime, may express an opinion as to the mental condition of such a person at the time of the investigation A qualified physician may also be allowed by a court to assert an opinion from an examination made of a defendant subsequent to the commission of a crime as to whether or not the person accused thereof was sane or insane at the time the offense was perpetrated In cases of derangement, the indications of the infirmity frequently manifest themselves for some time after the paroxysm of dementia, and for this reason evidence of recurring symptoms is admissible after the commission of an act asserted to have been perpetrated while laboring under a state of mental exaltation or depression From such testimony the jury are authorized to deduce an inference as to whether or not the act in question resulted from a mind that was disordered

Contract with City Health Officer for Services in Epidemic Held Invalid

The Supreme Court of Minnesota holds that a demurrer was properly sustained to the complaint in the case of Bjelland vs City of Mankato (127 N W R 397), which was brought by the plaintiff, who was health officer of the city, to recover $1 695 for necessary services rendered in connection with eradicating and controlling an epidemic of small pox and typhoid fever in the city in 1908, pursuant to an alleged contract with the board of health of the city The court says that it found it necessary *to consider* only the question of the validity of the contract which was the basis of the plaintiff's claim The complaint showed that he was a member of the board of health—that is a public officer—and that he entered into the contract with such board for the performance of the professional services for the value of which he sought to recover in this action Such contracts are forbidden by section 5,032 of the Revised Laws of Minnesota of 1905, and are void The rule that such contracts are void and cannot be enforced rests on a wise public policy, and it must be enforced without reference to the merits of the contract, the intention of the parties, or the hardship of exceptional cases Nor does the court agree with the contention that the statute and the rule do not apply to a board of health, and that it may employ one of its members its health officer for the purpose of controlling and suppressing an epidemic of contagious or infectious disease As to the suggestion that the board of health was confronted by an emergency which justified it in making the contract in question, the court answers that an emergency confronts a board of health in every case of an epidemic of contagious or infectious disease, but this affords no reason why such cases should be excepted from the statute by the court for the board may employ, when the emergency justifies it, a physician other than one of their own number to render the extra medical services

Treatment for Rheumatism Instead of Periostitis or Osteomyelitis

The Supreme Court of Alabama affirms a judgment for the defendant in the malpractice case of Hamrick vs Shipp (72 So R 932) It says that the plaintiff's son had been thrown by a mule Some days afterward the condition developed which made it necessary to procure medical attention The defendant treated him for acute articular rheumatism Other physicians of good reputation concurred in his diagnosis and treatment There was testimony, however, which went to show that the boy's trouble was periostitis or osteomyelitis But the question put to the jury by the pleading was whether the defendant had 'conducted himself in an ignorant unskillful or negligent manner" in and about his treatment of the boy, and the trial judge instructed the jury on the defendant's request, that the question for their determination was not whether the boy had periostitis, osteomyelitis or rheumatism, but whether the defendant was possessed of reasonable skill, and whether he had been reasonably diligent, not negligent, in diagnosing and treating the case There was no reversible error in giving the instruction It was perhaps not so carefully limited on all sides as it might have been, for it seemed capable of the interpretation that it was not for the jury to determine the nature of the boy's ailment for any purpose, whereas, if the jury could have decided that question, that decision would have been of consequence in determining the ultimate question proposed by the pleading But there is no rule of responsibility which requires the physician to be infallible in the diagnosis or treatment of diseases The fact, therefore, if it was a fact, that the disease was something other than rheumatism, was evidential merely, not conclusive The instruction given correctly stated the ultimate question to be submitted to the jury for decision If the plaintiff apprehended prejudice from lack of further statement, he should have supplied that element by an explanatory instruction

Wrongful Attempt to Discredit Physician as Witness

The Springfield (Mo) Court of Appeals says that in the personal injury case of Dent vs Springfield Traction Co (129 S W R 1044) counsel for the plaintiff said in his opening statement that one Dr R would not be called as a witness because he was the physician for an employe of the defendant, he having attended the plaintiff as a physician when she was first injured It was, perhaps, the privilege of the plaintiff not to call her physician as a witness, but the remarks discrediting him beforehand may have been prejudicial to the defendant Such a statement, under the circumstances, justified the application of the defendant for the appointment of a physician by the court to make a physical examination as to the extent of the plaintiff's injuries Especially might this be considered true because the defendant could not use Dr R as a witness—he being privileged—should the plaintiff object to his testimony. And it may be considered one thing to waive your own privilege and quite a different proposition to make a statement to the jury implying that you are constrained to do so by reason of some act or conduct imputable to the opposite party

But when the trial court showed its willingness to have a physician appointed in this case to make the examination the defendant sought to name the physician, suggesting one of its own employes, and afterward named another physician The court however refused to appoint either of those named; but, without suggestion from either party, named a certain Dr S, a reputable physician and surgeon, to make the examination No objection to his qualifications were made by the defendant at any time, and no bias or prejudice was claimed, the only objection being a mere statement of the defendant's counsel that the personal relations between Dr. S and himself were not pleasant This certainly was not a sufficient disqualification to prevent the physician from making a correct examination and properly discharging his professional duty, and the objection to the action of the court is held wholly unsubstantial

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Medical Record, New York

December 9

1 *Case of Sulphemoglobinemia T W Clarke Utica, N Y, and R M Curtis, Paterson N J
2 Chemical Problems in Diabetes A Magnus Levy, Germany
3 Occupation as a Therapeutic Agent in Insanity M D Neff Brooklyn
4 Ventilation of Cars W A Evans Chicago
5 Diagnosis and treatment of Osteal Tuberculosis without Abscess Formation B Holmes
6 Treatment of the More Common Diseases of the Skin E L Cocks, New York

1 **Sulphemoglobinemia** —To the seven cases of this disease now recorded in the literature, Clarke and Curtis add another The patient, a woman 24 years of age, had never been robust, having suffered from most of the ills to which woman is heir A few days previously she had noticed that her lips had become blue and her color ashen, though she herself did not feel ill She was somewhat weak and markedly constipated Her appearance at that time was much as it is to day Her skin was of a steel blue, and her lips purple black The general appearance has been described as being cadaveric, or better as of the ghastly hue seen in a person standing under the Cooper Hewitt mercury light Physical examination was, however, negative except for the remarkable discoloration of the entire body The heart and lungs were practically normal The patient was observed for some weeks, and as the ordinary blood examination failed to reveal any polycythemia or other abnormality to account for the condition, a tentative diagnosis of sulphemoglobinemia was made Two cubic centimeters of blood were withdrawn from a vein in the arm The blood, which was of a rich chocolate color, was shaken with twice its volume of distilled water in order to lake the corpuscles, and then filtered several times to remove all of the corpuscular remains and fibrin, and give a clear solution This solution then being further diluted with distilled water was examined with a small pocket spectroscope and showed an intensely dark absorption band in the red portion of the spectrum in the situation characteristic of the band of sulphemoglobin Artificial solutions of sulphemoglobin made by the passing of sulphuretted hydrogen through laked and diluted dog's blood and of methemoglobin by adding potassium ferricyanid or sodium nitrate to similar blood were made for comparison

The methemoglobin solution when mixed with oxyhemoglobin showed the two absorption bands of oxyhemoglobin in the yellow and green portions of the spectrum, and the characteristic methemoglobin band deep in the red much nearer the C than the D line. The artificial sulphemoglobin showed also the bands in the yellow and green, and a band in the red, but not so far in the red as in the methemoglobin spectrum, the band being midway between the C and D lines. The patient's blood in a concentrated form showed complete obliteration of the oxyhemoglobin bands, and the presence of an exceptionally clearly defined band half way between C and D absolutely indistinguishable from that of the artificially made sulphemoglobin.

From the evidence at hand, the authors conclude that this is an undoubted case of sulphemoglobinemia of idiopathic origin.

New York Medical Journal

December 3

7 *Iodin. F. T. Woodbury, Fort Assiniboine, Mont.
8 Regulation of Prostitution. F. Bierhoff, New York.
9 Hypernephroma. I. W. Blackburn, Washington, D. C.
10 Operative Treatment of Cysto-Urethroscopy. L. Buerger, New York.
11 Case of Hypernephroma. J. A. Jackson, Indianapolis.
12 Carbon Compounds of Arsenic in the Treatment of Syphilis. S. C. Runnels, Indianapolis.
13 Centenarians. J. Knott, Dublin.
14 Treatment of Diabetes Mellitus. H. C. Sawyer, San Francisco.
15 Cholelithiasis. C. M. Stimson, Philadelphia.
16 Cocain Intoxication. N. S. Yawger, Philadelphia.

7. **Iodin.**—In Woodbury's opinion iodin is the long desired ideal disinfectant and antiseptic. It is cheap, easily obtainable, can be carried in small bulk, is efficient in high dilution, does not damage tissue even where its vitality has been much reduced by traumatism or infection, it has been invariably successful as a germicide under all conditions when the drug and the germs have been brought together, and though it has great powers of tissue penetration the writer has yet to see a case of poisoning even when it was mopped in full strength on the peritoneum and in the parturient uterus. It can be used to disinfect the area of operation without previous preparation; to sterilize instruments, suture material, dressings, and the hands of the surgeon, during the time that the patient is going under the anesthetic. Woodbury prefers to boil his instruments when he can, as the continued use of iodin tarnishes and affects the cutting edges requiring whetting often, though the same in a lesser degree may be said for the soda solution. He uses it entirely to prepare his hands and finds it rarely causes irritation. It can be removed from the hands by boiled or raw starch, ammonia water or the aromatic spirit of ammonia, hydrogen peroxid, Fowler's solution, or ether. It is advisable where long periods of operating are expected, to dip the hands in iodin and immediately decolorize with ammonia; rubber finger cots or rubber gloves may be slipped on, and then redipped in the iodin. This is merely to protect the operator's hands from being dyed a deep brown, which is almost impossible to get rid of, especially when the tincture is reapplied every one or two days.

The solution of one teaspoonful of the tincture to the quart of physiologic salt solution is, roughly, a dilution of seven milligrams in one hundred cubic centimeters, or .007 per cent., and in this strength is most efficacious as an irrigation in all inflammatory and catarrhal conditions of mucous membrane. It can be used in the eye for the ordinary forms of conjunctivitis with prompt improvement. He has also found it to be very efficacious in acute urethral gonorrhea in twice and three times this strength. When a case of mumps developed in a company of infantry this solution was supplied to the company to be used copiously as a gargle for several days. No other case of mumps developed. It is a routine treatment for all acute throat affections, and in cases of amygdalitis the tonsils are also mopped once daily with the tincture and Bier's treatment with a rubber bandage around the throat has cut down the illness to an average of five days on sick report. It will promptly abort colds when used as a spray. Woodbury has found the iodin salt solution is excellent in cystitis acute and chronic, and catheters kept in the tincture and then transferred to this solution just before use are sterile, non-irritant and perfectly pliable.

The troublesome cases of chancroids with suppurative inguinal adenitis which drag along in hospital for so many weeks are now rapidly hurried to convalescence by a vigorous pursuit with the tincture. Buboes which have already broken down promptly become healthy granulating wounds and heal up without further trouble.

Boston Medical and Surgical Journal

December 1

17 Doctrine of Vitalism in Medicine. M. G. Seelig, St. Louis.
18 Present Knowledge of the Laws of Heredity. W. P. Graves, Boston.
19 Postoperative Psychoses. J. G. Mumford, Boston.
20 Myxo-Fibrosarcoma Originating in the Great Omentum. H. Cabot, Boston.

Archives of Diagnosis, New York

October

21 *Pharmaco-Diagnosis of Cardiac Diseases. A. Abrams, San Francisco.
22 *The New Functional Psychiatry. W. A. White, Washington, D. C.
23 *Adventitious Murmurs Accompanying tne First Heart Sound. A. L. Benedict, Buffalo, N. Y.
24 Importance of the Neck and Chest Muscles in the Production of the Phenomena Obtained by Percussion and Auscultation of the Chest. F. M. Pottenger, Monrovia, Cal.
25 Diagnosis of Chronic Duodenal Catarrh. M. Einhorn, New York.
26 Diagnostic Significance of the Acute Headaches of Children. L. Kerr, Brooklyn, N. Y.
27 Gastro-Intestinal Hemorrhage in Children. L. Fischer, New York.
28 Diagnostic Difficulties in Reconciling the Pathologic Findings with the Clinical Manifestations in an Unusual Case of Cerebral Softening. A. Gordon, Philadelphia.
29 Differential Diagnosis Between Gonorrheal Epididymitis and Syphilitic Orchitis. A. Ravogli, Cincinnati.
30 Diagnosis of Stricture of the Male Urethra. V. C. Pedersen, New York.

21. **Cardiac Diseases.**—Succinct reference is made by Abrams to the employment of drugs in the diagnosis of some affections of the heart.

Heart Reflex: The reflex in question is a contraction of the myocardium of varying duration when the skin of the precordial region is irritated. This reflex may also be discharged by irritation of the mucous membranes, psychic influences and percussion of the muscles, but the most effective method of provoking it is by means of concussion of the spine of the seventh cervical vertebra. Atropin paralyzes the motor endings of the vagus. During the full physiologic action of the drug the heart reflex is abolished. Small doses of pilocarpin are antagonistic in their action to atropin. After an hypodermic injection of pilocarpin (gr. 1/10), one notes an exaggeration of the heart reflex.

Adams-Stokes Syndrome: Heart-block is caused by lesions of the auriculo-ventricular bundle, and there are also neurogenic forms of the disease due to overstimulation of the vagus. The use of atropin removes the block in the neurogenic forms, whereas in the myogenic forms the heart-block is unaffected. Partial heart-block may be provoked by the inordinate use of digitalis.

Tachycardia: Aconite (tincture is most reliable) slows the heart by vagus stimulation and has only a slight action on the myocardium. If aconite slows the pulse in tachycardia, diminished tonic activity of the vagi may be assumed to exist. If atropin is used between the attacks of paroxysmal tachycardia, and no attack ensues, one may conclude that paralysis of the vagi is not responsible for the paroxysms. In tachycardia from vagus paralysis, the heart does not respond to digitalis because the latter ordinarily inhibits the rapidity of cardiac action by stimulation of the vagi. Here strophanthus is more effective, because it slows the heart by direct action and not by vagus stimulation.

Arhythmia: Vagus stimulation not only slows the heart-rate, but may also create irregularities in rhythm. If this vagus influence is eliminated by atropin, the irregularities will disappear and thus the neurogenic nature of the irregularity is demonstrated. Irritation of the mucosa of the nasal septum opposite the middle turbinate bone will evoke an arhythmia of vagal genesis. Here the irritation is conveyed indirectly to the vagus by the trigeminus. If the nasal mucous membrane has been cocainized, irritation of the mucosa by means of a probe will not evoke arhythmia. Cocainizing first one and then the other side of the nose, the source of irritation may be localized and by correcting the nasal anomaly the arhythmia may be cured.

Myocardial Diseases: Myocardial disease may be suspected even in the absence of cardiac signs, when symptoms not unlike those which accompany the broken compensation of valvular diseases present themselves. A reliable preparation of digitalis may solve the difficulty; if, after five days, the symptoms are not relieved and there is no rise of the peripheral arterial tension nor increased strength of the pulse, the drug can do no good and may even be dangerous Within thirty six hours after the use of a reliable preparation given in adequate doses, one finds that the pulse becomes stronger, more regular and slightly decreased in frequency (provided the pulse was accelerated before the use of digitalis) and diuresis is augmented By estimating the quantity of urine excreted one is afforded a guide in a dual direction the reliability of the drug and the efficiency of the cardiac muscle In cardiac muscular insufficiency, the quantity of urine may be diminished by one half or more Owing to the delayed action of digitalis, an increase in the quantity of urine does not occur until the second day of its use, then it continues to increase day after day until the normal is attained (1,500 c c in twenty four hours in a healthy adult), at this time, and when the pulse frequency has been reduced and the tension is increased, one should withdraw the drug, reduce the dose, or give it less frequently

Cardiac Asthma Dyspnea resembling this affection may be excited by irritation of the nasal mucosa, and here cocain applied to the latter by arresting the attack establishes the diagnosis In differentiating cardiac from bronchial asthma, the former may be prevented by cardiotonic medication, whereas bronchial asthma is uninfluenced unless a dilated right ventricle complicates the disease Acute failure of the ventricles is commonly present in cardiac asthma, and the attack may be at once jugulated by concussion of the seventh cervical spine Râles are usually absent in cardiac asthma unless complicated by lung edema Amyl nitrite inhalation causes the râles due to bronchial spasm to disappear and is without influence on the râles caused by mucus or fluid in the bronchial tree

Ventricular Dilatation In differentiating this condition from a pericardial exudate, the heart reflex is invaluable If the area of precordial dulness is modified after cutaneous irritation, cardiectasis and not an exudate is present

Angina Pectoris The pains of false angina are at once subdued by sufficiently large doses of antipyrin, whereas in true angina there is no relief, in fact, the pains may be accentuated, owing to the internal vasoconstriction of the drug

Thyroid Heart The physiologic tonus of the vagus is said to be dependent on the thyroid secretion In diminution of the latter (hypothyroidism), symptoms of cardiac weakness are present Disturbances due to hyperthyroidism are not common In hypothyroidism (Basedow's disease), antithyroidin or the antiserum of Beebe may improve the condition It is well to know that the cardiac signs of the latter condition are accentuated by ten 5 grain doses of a reliable thyroid preparation Iodothyrin or iodin will act in the same way and intolerance to iodin is an early sign of hyperthyroidism A biochemic evidence of the latter is the antagonism existing between thyroid extract and epinephrin in the pupillo dilator action of the latter on the eye of the frog In the normal epinephrin does not dilate the pupil, but this occurs after extirpation of the pancreas, in pancreatic insufficiency, diabetes and Basedow's disease The foregoing susceptibility is most probably caused by hyperthyroidism

Cardiac Murmurs Cardiomuscular murmurs dependent on the delirious condition of the organ disappear after the use of digitalis The latter drug also causes the disappearance of the murmurs of a relative valvular insufficiency The loudness of a murmur is largely dependent on the activity of the heart Faint murmurs may often be converted into loud ones by increasing cardiac activity and the latter may be attained by digitalis Anemic cardiac murmurs disappear after the use of an appropriate chalybeate, but it must completely disappear before we are justified in concluding that it is hemic, insomuch as anemia may coexist with an organic murmur

22 **Functional Psychiatry**—The keynote of what White terms the new functional psychiatry is its distinctly individualistic trend, its emphasis of the importance of individual psychology The new movement emphasizes so much more the necessity of the analysis of the symptoms in the individual case that in spite of the work of the Kraepelin school in this direction, White thinks it proper to designate individual psychology as the characteristic of the new movement in contrast to the life history conception underlying the Kraepelinian The fundamental conception of this new individualistic viewpoint is that every psychic fact must have been preceded by an efficient psychic cause Ideas, or better, mental states, do not arise *de novo* They must be the outcome always of other mental states from which they necessarily issue This is true throughout the world of psycho pathology, even in the realm of the so called organic—the psychoses associated with well defined brain changes That an alcoholic should have delirium may well be dependent on a toxemia, but whether he sees in his delirium snakes or monkeys, visions of his office or of hell, must depend on purely psychic causes, on the pre existing psychic material which has become involved in the disorder Whether a paretic is exalted or depressed, whether the exaltation is largely erotic or expresses itself by delusions of great wealth must find its explanation in the mental make up of the person afflicted, and the character of his psychic trends The fact intended to be emphasized is that the disease process can only deal with the material it finds at hand or which is furnished it, and which it does not itself create

23 **Adventitious Murmurs**—Benedict's patient had Banti's disease with marked ascites The apex beat was noted in the fourth interspace, just inside the nipple The cardiac area, determined by auscultatory percussion and by Benedict's modification of that method using a tuning fork instead of percussion, extended to the second space and, while not abnormally large, was tilted upward to the left and downward to the right There were no valvular murmurs, but clear, though not very forcible, valvular clicks at all valves There was a rather prolonged sound accompanying the first heart sound, to which Dr Solis Cohen's designation of "crunching" applied nicely Benedict's interpretation of the phenomenon was that the heart, crowded up by the ascites and tilted so as to strike still more forcibly against the left lung, produced an audible current of air from the vesicles into the bronchial tubes, somewhat analogous to that obtained in percussing to elicit the cracked pot sound The volume of air involved was, of course, not enough to produce an appreciable expiration, and it could not be made out that the crunching sound was increased either during expiration when the cardiac compression was unresisted, or during inspiration when we might suppose that the resisting air current would have intensified the sound On the contrary, the inspiratory and expiratory breath sounds interfered with the clear perception of the cardiac crunch However, respiration, unless very gentle, also interferes with the cracked pot sound

Benedict has noted the same phenomena in several other cases in which it might be supposed that the apex beat would have an unusually direct compressive action on the lung Among these causes are mentioned ballooning of the intestine or particularly of the stomach, and unduly vigorous cardiac action, either with organic hypertrophy or due to functional causes Cardiac displacement, adhesions tying down parts of the lungs so as to offer special local resistance to the apex beat, small effusions, etc might also be expected to give rise to the same phenomenon Another adventitious sound in connection with the apex beat is of fairly common occurrence With the stomach distended, either spontaneously or artificially, especially when the contents are mainly gaseous, the cardiac impact is almost always appreciable The stomach tube, with a funnel inserted, makes a very good monaural stethoscope, and one can hear very interesting sounds, as of gastric contraction (manifested by the churning of the contents, scarcely the muscular movement itself), the effervescence of a bicarbonate if the contents are strongly acid, the effervescence produced with hydrogen peroxid, etc The respiratory and cardiac sounds are usually audible to some degree through the stomach tube Aside from the detection of the cardiac impulse with the stomach tube in place, the first heart sound of its accompanying systolic murmur, is pretty regularly transmitted to some degree over the area of a distended stomach

In quite a number of cases Benedict has been able to map out the gastric area by auscultatory percussion, with the patient's own heart acting as an assistant to furnish the percussion. In some instances, there is purely a transmission of a heart sound, valve closure or murmur, as the case may be. In others, the apex beat either starts a wave in the liquid contents of the stomach, or seems directly to force a little air or liquid through the orifices, mainly the pylorus, or reflexly produces peristalsis which, in turn, may cause a sound in either of the ways just mentioned. Thus gastric sounds, corresponding to the heart beat, may be a mere thump, a crunch, swish or indescribable murmur.

Journal of the Indiana State Medical Society, Fort Wayne

November

31 Ophthalmia Neonatorum. G. F. Keiper, Lafayette.
32 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.
33 County Secretary as the Local Medical Historian. C. N. Combs, Terre Haute.

Medical Fortnightly, St. Louis

November 25

34 Postoperative Care and Treatment of Suprapubic Prostatectomy. D. W. Basham, Wichita, Kan.
35 Pyloric Obstruction Due to Extrinsic Causes. G. A. Beedle, Kansas City, Mo.
36 Plea for Conservative Surgery. H. D. Eaton, Chihuahua, Mexico.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

November

37 Surgery of the Obese. R. T. Morris, New York.
38 Effect of Alcohol on Psychoneuroses. A. Gordon, Philadelphia.
39 Poliomyelitis; New Facts Concerning Its Etiology, Early Diagnosis and Treatment. T. A. Williams, Washington, D. C.
40 *Prevalence of Migraine in a Large Family. G. E. Price, Philadelphia.
41 Status of Trachoma in Philadelphia. C. P. Franklin, Philadelphia.
42 *Galactagogue Action of Infundibulin. I. Ott and J. C. Scott, Philadelphia.

40. **Migraine in a Family.**—The study of the family history given by Price is of interest because of: 1, the remarkable prevalence of migraine; 2, the unusual sensory manifestations in several of the cases, and, 3, the association of epilepsy with migraine in one case. A man, aged 21, complained of violent headaches occasionally preceded by numbness of the right side of the body. He stated that the headaches had occurred paroxysmally several times a year since he was six years of age, the longest interval between the attacks having been six months. The headaches occur, as a rule, in groups of three of six in rapid succession; thus, if he has one attack, he is apt to have more, and, if he has the fourth attack, he expects them to continue until he has had six. Many of his attacks are preceded by numbness and hypesthesia, commencing in the toes, and creeping up until they affect the leg, arm, trunk, face and tongue. He stated positively that these symptoms are most marked in the hand and foot, becoming less toward the proximal portion of the extremities, being very slight over the trunk; they are present to a marked degree, however, in the lips and tongue. At times he has been unable to control the movements of the affected arm and leg. The numbness lasts from twenty minutes to one hour, and is followed by severe headache on the side opposite the numbness, lasting from twelve hours to three days. Other attacks are preceded by visual disturbances; everything will look as if moving around in a circle; blurring of vision; hemianopsia. The paroxysms are always preceded by pallor and usually accompanied by vomiting, followed by relief of the headache. There is no history of unconsciousness. The grandparents, as far as could be learned, were free of any nervous condition. On the maternal side, the history is negative as to migraine, epilepsy or insanity.

On the paternal side, one aunt has severe attacks of migraine. Another aunt suffers from migraine but not severely. A third aunt had St. Vitus's dance when a child, and in adult life was exceedingly nervous. An uncle acted peculiarly, and was said to have "softening of the brain." The father, aged 67 years, suffers from attacks of blindness for a few seconds, then numbness of arm, tongue and lips, followed by severe headache. At times his speech is affected to such an extent that the family cannot understand what he is saying. The rest of this generation, thirteen in number, all reached adult life, but were free from any nervous disease. In the present generation there are eight children; seven have migrainous attacks, and three have marked numbness affecting one-half of the body.

42. **Galactagogue Action of Infundibulin.**—In the goat the authors found in the early nursing period that infundibulin injected into a vein in the ear rapidly and greatly increases the flow of milk. The nipple had a cannula inserted into it, and a water aspirator produced the suction necessary to empty the udder. The milk aspirated before and after the injection was caught in a graduated flask and measured every five minutes. This increased flow of milk is not due to an increased amount of blood in the udder, as infundibulin contracts the arterioles. This fact, the authors state, can be correlated with the increased size of the pituitary in pregnancy, although in these cases the enlargement is chiefly in the anterior lobe.

Buffalo Medical Journal

December

43 Abnormalities and Complications of the Pregnant State. L. G. Hanley, Buffalo.

Long Island Medical Journal, Brooklyn

November

44 The Isle of Pines as a Hibernaculum. W. Browning.
45 Tuberculous Peritonitis. C. H. Goodrich, Brooklyn.
46 Colles' Fracture. W. H. Rankin, Brooklyn.
47 Rupture of the Liver. W. A. Sherwood, Brooklyn.

Journal of the Kansas Medical Society, Kansas City

November

48 Vital Statistics in Relation to Public Welfare. W. J. V. Deacon.
49 Acute Poliomyelitis, or Acute Myeloencephalitis. H. H. Bogle, Pittsburg, Kan.
50 *Relation of the Medical Profession to Medical Institutions and the State. M. T. Sudler, Lawrence, Kan.

50. **Relation of Medical Profession to Medical Institutions.**—Sudler believes that the medical profession of Kansas is overcrowded, and that unqualified and poorly educated men have been admitted to the profession and lowered it in the estimation of the public. This has fostered irregular practitioners such as osteopaths, chiropractics, christian scientists, etc. At present public charity is dealt out without any plan or organization. This is wasteful. The state should organize its hospitals and schools with definite relation to the needs of the people and the profession. The state should provide laboratories where pathologic and bacteriologic examinations can be made at moderate cost. As a matter of economy students can be instructed in these same laboratories. The state should maintain hospitals which would relieve physicians from doing charity work as far as possible. Before entering on the practice of medicine Sudler would ask that every candidate should have had at least two years of college work. Then four years in the medical school, and finally be required to pass an exhaustive practical examination.

Journal of the Oklahoma State Medical Association, Muskogee

November

51 Carcinoma of the Skin. E. S. Lain, Oklahoma City.
52 Cretinism. J. E. Hughes, Shawnee.
53 Internal Splint in Treatment of Fractures. H. E. Pearse, Kansas City, Mo.
54 Medical Ethics. L. S. Willour, Atoka.
55 A [illegible] lotomy and Lipectomy. C. N. Ballard, [illegible]
56 [illegible] J. Donohoo, Afton.

Kentucky Medical Journal, Bowling Green

November 1

57 Goiter. Indications for Operation and Results. J. R. Wathen, Louisville.
58 Tonsillectomy as a Routine Practice in Children of a Tuberculous Diathesis. W. C. White, Louisville.
59 Indications for the Technic of Gastro-Jejunostomy and Enterostomy. W. H. Wathen, Louisville.
60 The Lactating Breast. T. K. Vanzandt, Louisville.

Texas State Journal of Medicine, Fort Worth

November

61 Hookworm Disease or Uncinariasis. C. W. Stiles, Washington, D. C.
62 *The Reasons Why Prescriptions Fail. W. M. Brumby, Austin.
63 *An Efficient and Safe Cataract Dressing; a Modification of Holtz and Green's Operation of Entropion. W. R. Thompson, Fort Worth.
64 Inflammatory and Infective Changes Produced by Gall-Stones. M. P. Stone, Dallas.

65 The Cystoscope and Some of Its Advantages C H Harris, Fort Worth
66 The Social Evil J P Oliver, Caldwell

62 **Reasons Why Prescriptions Fail.**—Brumby reviews some of the phases of the patent and proprietary medicine evil and urges physicians to familiarize themselves with the United States Pharmacopeia and the National Formulary He endorses the work of the Council on Pharmacy and Chemistry.

63 **Cataract Dressing.**—Thompson uses a crinolin bandage over the regular bandage and dressing. The only new thing about this bandage is the technic in its application whereby the ears are prevented from coming in contact with the bandage when dry This dressing fits snugly and has a feeling of protection When it is removed on the second, third or fourth day, the crinolin portion over the face and eyes can be used as a mask externally by attaching tape and fastening around the head over the other dressing, or internally by placing next to the moist gauze and applying bandage over it The absolute protection from external violence, as well as the complete immobilization of the eye and its appendages, renders this, in Thompson's judgment, one of the very best cataract dressings If properly applied he firmly believes that it will keep many patients from infecting the eye by innocently meddling with the dressing

Thompson has for a number of years, in cases of entropion, been doing an operation in part after Greene and Holtz with a modification of his own The operation is as follows An incision is made on the inner surface of the lid, in a line parallel to and about 2 mm distant from the row of openings of the Meibomian ducts It is carried through the conjunctiva and whole thickness of the tarsus, and should extend, in cases of complete entropion, from the inner to the outer canthus An incision is next made through the skin about 2 mm above the lashes, in operations on the upper lids, extending from the inner to the outer canthus By a dissecting process the upper margin of this skin is elevated to a point above the upper border of the tarsus, which is exposed at three or four points by cutting out sections of the muscle and sutures, three or four in number, are passed through the skin of the lower margin of this cut with curved needles at points corresponding to the exposed portions of the tarsus, and with the assistance of forceps the sutures are anchored into the upper portion of the tarsus by passing the needles partially through it The sutures are then tied, care being taken to see that the cut edge of the skin comes in contact with the exposed areas of the tarsus Material assistance can be had by placing a small probe or the end of a pair of forceps beneath the suture and making gentle pressure while the knot is being tied The portion of skin which has been elevated by dissection is left free Best results are obtained by seeing that the upper margin of this skin remains free until the lower margin is attached to the tarsus The advantages of this over other operations is two fold first, the piece of skin from the lashes to where it is united to the tarsus is so short that it is not liable to stretch, thereby allowing the margin of the lid to again turn in, second, there is no sacrifice of integument, for that reason rendering the operation harmless in so far as the welfare of the lids are concerned

Journal of the South Carolina Medical Association, Charleston

October

67 The Owen Bill and Its Opponents S A Knopf New York
68 Uses of Carbonic Acid Snow in Surgery S C Baker, Sumter, S C
69 Hookworm Disease as It Pertains to the Eye and Ear Specialty L O Mauldin, Greenville, S C
70 The Unspeakable Hookworm F J Carroll, Summerville, S C
71 Value of Free Nasal Breathing T A Quattlebaum Columbia, S C

Woman's Medical Journal, Cincinnati

November

72 The Nervous Child—Its Management and Care M S Macy, New York
73 A Case of Onychogryposis C D Mosher, Palo Alto, Cal
74 Mental Hygiene M L Neff, Brooklyn, N Y
75 Defective Speech in Backward and Feeble Minded Children B C Downing Lexington Mass
76 The Bedside Widal Test G Gilman, San Francisco
77 A Case of So Called Cryptogenetic Infection C S Rockhill, Cincinnati
78 Precocious Diagnosis of Measles by Koplik's Sign F. S Mason, New York

Southern California Practitioner, Los Angeles

November

79 Spengler's Treatment of Tuberculosis W J Barlow, Los Angeles
80 True and False Tabes J T Fisher, Los Angeles
81 Rabies Its History, Etiology and Treatment G L Cole, Los Angeles
82 Measles and Its Eye Ear, Nose and Throat Complications H A Kiefer, Los Angeles
83 Nervousness in Children J A Jackson, Pasadena
84 Hemorrhage from Middle Cerebral Artery R F Palmer, Mesa, Ariz
85 Anterior Poliomyelitis E Wing Los Angeles
86 Brains G D Troutman Tucson Ariz
87 Difficulties in the Cure of Tuberculosis F M Pottenger, Monrovia, Cal

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Clinical lectures single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London

November 12

1 Greek Medicine in Rome T C Allbutt
2 Four Cases of Pneumonic Plague H P Sleigh
3 Recent Plague Cases in Suffolk H H Brown
4 *Radium Therapy in Eye Diseases A Lawson and J M Davidson
5 *Serum Anaphylaxis A B Sloan
6 Bionomics of Pathogenic Organisms and Its Bearing on the Spread of Disease A C Houston
7 Organization and Results of the Typhoid Campaign in Southwest Germany O Lentz
8 Dysentery Bacillus Carriers G H K Macalister
9 Diphtheria Bacillus Carriers J A Arkwright
10 Interpretation of the Precipitin Reaction D A Walsh and H C Chapman
11 Anaerobic Culture of the Intestinal Microorganisms W J Penfold
12 Gastro Enteritis Due to *B Paratyphoid* F A Bainbridge
13 Recognition of *B Typhosus* by Complement Fixation H R Dean
14 Serum Treatment of Dysentery M A Ruffer and J G Willmore

4 **Radium Therapy in Eye Disease**—After an investigation into the possibilities of radium as a therapeutic measure in eye disease, the authors, A Lawson and J M Davidson, concluded that radium is likely to prove of great service, both in the treatment of external diseases of the eye and in those of the eyelids The method of applying the radium was crude, but satisfactory The eye was first cocainized and the radium, which was contained in sealed glass tubes, permitting only the passage of beta and gamma rays, was applied directly to the affected part The fingers of the operator were protected by enveloping first that part of the tube not required and then the fingers in a thick, continuous wrapping of lead foil In no single instance did they observe the slightest ill effects from the use of radium, no increase of inflammation or aggravation of symptoms occurred in any case, with the one exception of pain It soon became evident that lesions of the cornea could be treated successfully with this time limit of five minutes by the same dose which, for affections of the skin and lids, required an exposure three or four times as long, and also that superficial lesions of the cornea frequently do not need any more than quite a small dose, such as 5 to 10 mg, applied once or twice as the case might demand With regard to the frequency with which the exposures were repeated, they were guided entirely by the progress or otherwise of each individual case When dealing with a virulent and highly dangerous process, such as a hypopyon ulcer, it was obviously necessary to get a result with the least possible delay, and consequently the exposure was repeated as soon as considered safe, if no improvement had been noted, whereas, in milder cases, they were content to wait longer for signs of amelioration, being anxious to find, if possible, the minimum number of sittings necessary to effect a cure The effects of radium are continuously exhibited for a considerable space of time, extending into a matter of six weeks at least, and so some of the cases had only one sitting, and a perfect cure resulted The margin of safety with regard to the minimum interval that should elapse between the sittings must obviously depend on the dose employed The larger the dose, the sooner should its effects be produced, and the longer the interval between the sittings Consequently, if a large dose was considered necessary at the first exposure they seldom repeated it with less than a week's interval, except it happened to be noted that the disease continued to spread in

spite of the treatment, in which case they considered that a second exposure might safely be given at a rather shorter interval

5 **Serum-Anaphylaxis**—The chief point of interest in Sloan's case of diphtheria was the occurrence of sudden collapse after the injection of serum at the onset of the second attack Sloan has no doubt that the grave condition was due to serum anaphylaxis (1) The collapse occurred within two hours of the injection without other apparent cause and while the child was lying quietly in bed, (2) the collapse was accompanied by the almost simultaneous appearance of a marked serum rash of the urticarial type Apart from the twenty four hours' urgent illness following the injection, the prolonged febrile period thereafter and the slow convalescence were chiefly due to the serum phenomena It is Sloan's opinion that, until we have more accurate knowledge of the circumstances bringing about anaphylaxis, we should be particularly cautious not to inject foreign serums without good reason, because we may by doing so render our patients so sensitive that a future necessary injection may cause grave consequences

Lancet, London

November 12

15 Greek Medicine in Rome T C Allbutt
16 A Case of Multiple Myeloma O T Williams E R Evans and E Glynn
17 Radical Operation for Malignant Disease of the Testis R Howard
18 Treatment of Pulmonary Tuberculosis by Intravenous Injections of Chinosol with Formaldehyd J McElroy
19 Operative Treatment of Papilloma of the Bladder T W T Walker
20 Chronic Bronchitis and Emphysema as the Result of Acute Pneumonia S West
21 Aortic Regurgitation W Broadbent

November 19

22 Prospect Before the Medical Student of To Day J A Lindsay
23 Hereditary Cranio Cleido Dysostosis D C L Fitzwilliams
24 *Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation D B Lees
25 *Fractures in the Neighborhood of Joints R Jones
26 *Use of Potassium Bichromate in the Treatment of Phthisis J B Tombleson
27 Compound Fracture with Tetanus Symptoms E K Williams
28 Osteomyelitis of the Left Clavicle A MacDonald
29 Uterus Bicornis Unicollis J L Masterman Wood

24 **Pulmonary Tuberculosis**—In November, 1909, Lees published the details of the method of treatment employed by him, and narrated thirty cases of incipient or early pulmonary tuberculosis in which it had been employed with success Now he records the present condition of these cases, and adds an account of twenty subsequent cases in which the same method of treatment has been used The thirty cases reported were all incipient or comparatively early cases, though three or four of them were very acute and rapidly advancing when the treatment was instituted In every one of these thirty cases the result is highly satisfactory Some of the twenty additional cases now reported came under treatment at a much later stage of the disease or were attended with grave complications In such instances recovery must be comparatively slow, and the final issue may be doubtful Any case of pulmonary tuberculosis, if allowed to progress unchecked for many months may easily reach a condition which is incurable by any form of treatment But Lees' contention in these two papers is that this ought never be allowed to happen Pulmonary tuberculosis is recognizable and ought to be discovered before there is any breaking down of lung tissue To suspend the diagnosis until tubercle bacilli are detected in the sputum is like delaying the diagnosis of cancer until the glands are involved

25 **Fractures in the Neighborhood of Joints**—Jones pays more attention to function than appearance, considers correct alignment of more importance than meticulous care in reposition of fragment believes that pain is always an indication for physiologic rest, and therefore deprecates early forced passive movements

26 **Potassium Bichromate in Treatment of Phthisis**—Six cases of phthisis treated by the internal administration of potassium bichromate are reported by Tombleson He gives the potassium bichromate in doses of ¼ gr (2½ minims of a 10 per cent solution in water) either alone or in a tonic mixture (phosphate, hypophosphite, or simple iron), such dose to be taken in a wine glass of water after food, at first twice and later three times a day The first dose and possibly the second may cause vomiting, but this does not matter, as, in his experience, toleration is easily established without missing a dose The color of some of the mixtures changes from yellow to green, but this seems in no way to impair the efficacy of the mixture Of these six patients the last four do not know they are under any special treatment. Improvement has been noticeable after the expiration of the first fortnight of treatment.

Annales de l'Institut Pasteur, Paris

September 25, XXIV, No 9, pp 673 752

30 *Oriental Sore (Recherches sur le bouton d Orient Cultures, reproduction expérimentale, immunisation) C Nicolle and L Manceaux
31 Efforts to Increase Resistance of Trypanosomes (Essai d obtention d une race de Nagana résistante d emblée à l Emétique) F Heckenroth
32 Immunity of Rabbits to the Bacillus of Hog Cholera (Immunité des lapins contre le b suipestlcus) J Shoukevitch
33 Influence of Concentration of Saccharose in Alcoholic Fermentation Rosenblatt

30 **Oriental Sore**—Nicolle and Manceaux have succeeded in cultivating the protozoon which they believe is responsible for Oriental sore, and in reproducing the lesion in dogs and monkeys after a period of incubation ranging from 16 to 166 days They find many points of resemblance between Oriental sore and kala azar, recovery from the latter protects the dog against infection from the virus of Oriental sore and affords a partial protection to the monkey The evidence on hand suggests that the dog is the natural reservoir for the virus of Oriental sore This animal thus seems to be the agent involved in the etiology of the Leishmanioses

Archives des Maladies du Cœur, Etc, Paris

November, III No 11, pp 641 704

34 Action of Roentgen Ray on the Blood in Diabetes P. Menetrier and A Touraine
35 Fibrillation of the Auricles and Extrasystoles of the Ventricles (Remarques sur les extrasystoles intercalées) T Lewis
36 Case of Congenital Hemolytic Jaundice C E Paris and Giroux

Bulletins de la Société de Pédiatrie, Paris

October, XII, No 7, pp 369 414

37 *Syphilitic Rachitis and the Wassermann Reaction C Leroux and R Labbé
38 Traumatic Abscess in the Brain Recovery After Operation Seven Months Later G Triboulet and M Savariaud
39 *Lumbar Drainage in Purulent Meningitis G Rosenthal
40 Acute Poliomyelitis Simulating Landry s Paralysis G Schreiber

37 **Syphilitic Rachitis and Wassermann's Reaction.**—Leroux and Labbé found the reaction positive in the fourteen cases of rachitis reported whenever there were manifestations of virulent inherited syphilis In the cases in which the reaction was negative there were only dystrophic and rachitic malformations without any virulent manifestations The findings confirm the assumption that rachitis may have a syphilitic origin, yet it is not of a syphilitic nature, syphilitic rachitis seems to be mainly the result of the dystrophic influence of inherited syphilis It is probable that any chronic infection or intoxication occurring at a certain period of ossification may be an efficient cause of rachitis It has been observed after malarial infection in infancy and in diabetic infants

39 **Continuous Lumbar Drainage**—Rosenthal gives an illustrated description of the needle which he uses for lumbar puncture, and the sheath which is left permanently in the opening for continuous drainage Gorse has reported the cure of a patient with suppurative meningitis, the treatment including this permanent lumbar drainage kept up for thirteen days

Presse Médicale, Paris

November 9, XVIII, No 90, pp 841 848

41 Direct Illumination of the Pelvis (Endopelvscopie) F Jayle

November 12, No 91, pp 849 856

42 Therapeutics in the Medical Curriculum (La chaire de thérapeutique à la Faculté de médecine de Paris) A B Marfan

Semaine Médicale, Paris

November 16, XXX, No. 46, pp. 541-552

43 Toxins of the Placenta. R. de Bovis.

Archiv für Gynaekologie, Berlin

XCII, No. 1, pp. 1-277. Last indexed Sept. 17, p. 1059

44 *Treatment of Tubal Pregnancy in Early Months. (Grundsätze und Erfahrungen in der Behandlung der Tubenschwangerschaft der frühen Monate.) H. Fehling.
45 Connections Between the Blood-Vessels in the Placenta of Twins with Single Ovum. F. Schatz.
46 Blastomycetes Isolated in Pure Cultures from Human Cancers. (Untersuchungen zur Aetiologie des Carcinoma und über die pathogenen Blastomyceten. II.) G. Leopold.
47 Operative Treatment of Uncomplicated Uterine Hemorrhage. (Behandlung uncomplicirter Blutungen insb. die radicale Beseitigung der klimakterischen und präklimakterischen mittelst vaginaler Corpusamputation.) H. Füth.
48 Operations for Genital Prolapse. B. Krönig.
49 Placenta Prævia and Anterior Vaginal Hysterotomy. A. Döderlein.
50 *Curability of Cancer Under Palliative Measures. (Zur Frage der Heilbarkeit des Krebses.) R. F. Bretschneider.
51 *Forensic Examination of Breast Milk. (Die Frauenmilch und ihre kriminelle Bedeutung.) J. Hertzsch.
52 Puerperal Auto-Infection. W. Zangemeister.
53 *Gynecologic Operations in Twenty-Three Years at University Gynecologic Clinic at Leipsic. P. Zweifel.
54 *Ultimate Results of Abdominal Panhysterectomy for Carcinoma. E. Aulhorn.
55 Bath-Water in the Vagina. (Eindringen von Badewasser in die Scheide.) B. Schweitzer.
56 Vaginal Ovariotomy in Sixty-Four Cases without a Death. F. Lichtenstein.

44. **Tubal Pregnancy.**—Fehling reviews his experience with 300 cases of tubal pregnancy in which he operated. In his latest series of 170 cases none of the women with tubal abortion succumbed, but seven died in the fifty cases of rupture of the gravid tube; of this number five died within two hours of the operation, the condition not permitting recovery; one died of yellow atrophy of the liver without peritonitis and the seventh succumbed to peritonitis resulting from an operative injury of the intestine. Only 12.4 per cent. of the patients had not borne children before. In 52 per cent. of the patients the other adnexa were more or less pathologic. The extra-uterine pregnancy occurred more than once in five of the cases. The interval between the last pregnancy and the extra-uterine averaged over four years and ranged up to sixteen. He comments on the rarity of extra-uterine pregnancy in private practice, having encountered only 10 cases among 1,000 private obstetric patients.

50. **Curability of Cancer Under Palliative Measures.**—Bretschneider declares that the prognosis of cancer in the so-called hopeless cases should be guarded, as instances are not lacking in which an apparently incurable growth subsided under merely palliative measures. He reports a typical case of the kind, a woman of 53 having a supposed inoperable carcinoma of the uterine cervix, but it was so favorably influenced by repeated palliative operations that at present there is not a trace, either macroscopic or microscopic, of malignant disease at the spot, and the metastatic foci have evidently been arrested in their growth and have partially retrogressed. The general health of the patient is normal and she has no disturbances of any kind. The clinical cure is thus complete, although she still carries numerous cancer foci; the carcinoma cells seem to have lost their proliferating capacity and the foci have become latent. When first seen, suspicion of kidney disease and dilatation of the left ventricle complicating the inoperable adenocarcinoma rendered the outlook very grave. After curetting and cauterization with 50 per cent. zinc chlorid there was some collapse, requiring camphor and heart tonics, but the patient was dismissed from the hospital in two weeks. She returned seven months later in very good general condition and the cancer had materially subsided. The same technic was applied again and with good results. Four months later she returned on account of hemorrhages and the cancer was then deemed operable, but at the laparotomy the peritoneum was found studded with cancerous nodules, and nothing further was done, as the diffuse peritoneal carcinosis had destroyed all hope of success. The cervix cancer was merely curetted and cauterized as before. A year later, two years after the first excochleation, the patient was seen again, and the aspect was that of perfect health for her age, 55. There had been no further hemorrhages, and the cervix presented merely the usual senile aspect. There are no records, he adds, of the necropsy findings in such cases of unexpected clinical cures of cancer, but there is nothing theoretically to prevent the assumption that carcinoma foci may completely retrogress. There is evidently a constant battle between the defensive forces of the organism and the proliferating forces of the carcinoma cells. Changes in the blood, as after fever or profuse hemorrhages, and possibly after deep cauterization of the focus, seem to exert sometimes a favorable action on the malignant foci. When the balance between the defences and the cancer cells is maintained and neither is victorious, the cancer is kept in a latent stage, but at any moment when the defensive forces are weakened by any cause the cancer may get the upper hand. Such an assumption would explain the late recurrences of cancer after a long period of latency. The case reported, and others on record, indicate that the defensive forces of the organism are powerfully seconded in their struggle with the cancer cells when the latter are vigorously cauterized or are affected in some other way. There are evidently factors still unknown to us at work in these cancer cases, and something is liable to turn up that will unexpectedly diminish the proliferating capacity of the carcinoma cells and thus induce a turn for the better. Such a possibility should always be borne in mind in the management of inoperable cancer, and the prognosis should not be so grave as to drive the patients into the hands of quacks, especially as the latter are liable here and there to get the credit of the unexpected turn for the better which may occur at any moment.

51. **Forensic Importance of the Lacteal Secretion.**—Hertzsch concludes from his research on fifty cases that the absence of colostrum-corpuscles indicates that the child was viable but not necessarily at term. The presence of colostrum-corpuscles alone is no criterion for determination of the date of delivery or age of the fetus or whether the child was suckled or whether this is the first pregnancy or not. If the breasts secrete ripe milk the presence of colostrum-corpuscles does not conflict with the assumption that the child was born at term. In a case of supposed infanticide he certified that a viable child had been born, basing his statement on the copious supply of ripe milk free from colostrum-corpuscles or other formed elements, and circumstances later confirmed the correctness of his testimony.

53. **Twenty-Three Years of Gynecologic Operations.**—This issue of the *Archiv* is a *Festschrift* on the occasion of the centennial of the university clinic for women at Leipsic. Zweifel reviews the 4,062 laparotomies, and devotes a hundred pages to detailed study of technics and results.

54. **Ultimate Outcome of Abdominal Hysterectomy for Cancer.**—Aulhorn compares the outcome with various technics in 420 cases of carcinoma of the uterus during the last eight years; in 221 other cases the growth was inoperable. In the operative cases there were nine women who had never borne children, while the rest averaged six children apiece. Of the 255 patients operated on over six years ago, fifty-two have had no recurrence to date, that is, 51 per cent. according to Winter's formula. Recurrence in the fifth and sixth years was observed in two cases.

Deutsche medizinische Wochenschrift, Berlin

November 10, XXXVI, No. 45, pp. 2081-2128

57 Vaginal Methods in Obstetrics. (Dilatation nach Bossi, Metreuryse, Kolpohysterotomie.) P. Jung.
58 *Treatment of Laryngeal Tuberculosis. G. Schröder.
59 Spontaneous Cure of Tuberculous Pneumothorax. R. Fried.
60 Treatment of Cancer in Upper Esophagus. (Hoher Speiseröhrenkrebs und seine Behandlung.) L. W. A. Pernice.
61 *Subcutaneous Infusion in Eclampsia. K. Frankenstein.
62 Units and Dosage with Radium. (Messmethoden und "Einheiten" in der biologischen Radiumforschung.) S. Loewenthal.
63 *Roentgen-Ray Treatment of Myomas. B. Schindler.
64 Index of Hardness of Roentgen Tubes. (Objektiver Härtemesser mit Zeigerausschlag für den Röntgenbetrieb.) H. Bauer.

58. **Treatment of Laryngeal Tuberculosis.**—Schröder has had 416 patients with laryngeal tuberculosis in his care during the last fourteen years and the course of sanatorium treatment for each averaged 140 days. He estimates the frequency of laryngeal tuberculosis as a complication of chronic pulmonary tuberculosis in 20 per cent. of the cases in which sana-

torium treatment is indicated, and he urges careful examination for it in every case of lung trouble Institutional treatment is advisable, as the general treatment is the main thing; only as the lungs improve and heal is there prospect of the laryngeal process healing Appropriate surgical measures may prove useful adjuvants, but tuberculin treatment should be instituted with extreme reserve and caution A relative cure was obtained in 24 per cent of his 416 cases, but only in 15 2 per cent of the 308 febrile cases and in 19 per cent of the "open" tuberculous cases

61 **Saline Infusion in Eclampsia**—In the case reported by Frankenstein the eclampsia developed during labor and the convulsions persisted after delivery No benefit being apparent from narcotics, 1 liter of salt solution was injected subcutaneously, repeated six hours later, after which there were no further convulsions, fifty minutes after the second infusion copious diuresis set in and the patient was cured Notwithstanding the fine results in this case he thinks it would be better to use a 4 per cent sugar solution or hypotonic salt solution, the ordinary salt solution is liable to make too many demands on the kidneys in their morbid condition Hypotonic solutions are compensated by the hypertonic composition of the blood He has had ample experience in regard to the harmlessness and the usefulness of a 4 per cent sugar solution in his operative gynecologic work The subcutaneous route is necessary in eclampsia, as there is no time to waste on intestinal infusion, but physiologic salt solution, he declares, should be banished from the treatment of eclampsia, with impending or actual heart failure any infusion is perilous

63 **Roentgen-Ray Treatment of Myoma**—Schindler reports continued and repeated success with this method of treating myoma, giving the details of three cases Under the exposures the complicated myomas are transformed into harmless small tumors, and by the menopause induced the cure is completed until scarcely anything is left of the myomas The objection that the relics of the myoma might be the seat of malignant degeneration later applies equally well to other measures such as castration The Roentgen ray treatment spares the patient the laparotomy and, he says, is entirely harmless, so that one is justified in giving the method a trial, at least, before resorting to an operation In the case of a woman of 50, a myoma the size of a child's head with excessive menstruation subsided one half in size and the menopause came on under eleven exposures in three weeks, with four exposures later

Deutsche Zeitschrift fur Chirurgie, Leipsic

October, CVII, No 113, pp 1 296

65 Differential Diagnosis of Fetal Chondrodystrophy and Imperfect Osteogenesis M Sumita
66 *Deforming Arthritis in the Young G K Perthes
67 Jonnesco's Method of Spinal Anesthesia (Die Rachi Anästhesie mit Stovain Strychnin) L Iuvara
68 Transplantation of Hypophyses and the Action of this Experimental Hypersecretion A Exner
69 Experimental Removal of the Pineal Gland A Exner and J Boese
70 *Improved Extension Treatment of Fractures (Unterbrechung der Längsextension durch Einschaltung von Gummizugen) A Wildt
71 Omentum Plastics for Perforated Duodenal Ulcer (Netzplastik beim Ulcus duodeni perforatum) G Axhausen
72 *Production of and Technic for Use of Compressed Air in Hospitals (Luftkompressor in Krankenhaus) F Kuhn
73 *Dislocation of Tarsometatarsal Articulations (Luxationen im Lisfranschen Gelenk) Grunert
74 Plastic Operation on Nerves for Paralysis of the Gluteal Muscles A Stoffel
75 *Saline Infusion in Peritonitis R Bertelsmann
76 Plastic Operation for Inguinal Eventration (Eine Tenomyoplastik bei Eventratio inguinalis) J M Jacobovici

66 **Deforming Arthritis in the Young**—Perthes believes that the frequency and importance of deforming arthritis of the hip joint in the young have never been sufficiently appreciated, he had no less than six cases of it last year Trauma can rarely be incriminated, in one of his cases there had been a suppurative process in the hip joint in infancy, but the symptoms of the deforming arthritis did not develop until a number of years later Pain and tenderness in the joint are rare, although long walking may induce spontaneous pains which may be experienced in the knee but in many cases there is no painfulness at any time The limping gait is due probably to insufficiency of the abductor muscles In all the cases that have been studied to date, (twenty six unilateral and twelve bilateral) the course of the pathologic changes was always slowly progressive, but the interference with movement and the spontaneous painfulness may grow less for a time In treatment, systematic massage and exercises, especially of the abductors, are recommended and immobilization warned against With much deformity of the bone operative correction may be advisable The details of the thirty eight cases on record are summarized

70 **Improved Technic for Extension with Fracture.**—Wildt calls attention to the importance of counteracting contraction more than is possible with the ordinary Bardenheuer technic, especially after the adhesive plaster has loosened up a little He describes the technic with which he accomplishes this by interposing a rubber strip in the plaster where it passes over the fracture The elastic strip is sewed to the strip of plaster, leaving fulness enough so the rubber can stretch by 1 cm. The adhesive plaster is then applied as usual, but where it crosses the fracture it is cut across, leaving the elastic rubber to stand the strain alone at this point

72 **Compressed Air for Massage, Etc**—Kuhn calls attention to the great therapeutic value of air under high pressure applied locally to organs, fractures etc The result is a total anemia of the part which is followed by a hyperemic reaction, inducing what he calls massage of the blood The hyperemia produced in this way is more intense than by any other means, while the action on the organs and parts of the air under high pressure is extremely gentle He applies the high pressure in a double sac in which the limb is placed the air circulating between the double walls of the sac, or a double sac is made to fit over the organ or part to be treated He states that this high pressure massage is useful as an adjuvant during and after the Bier hyperemia technic, while it is an independent method for effectually treating edema, varicose ulcers excessive callus and joint fractures The alternation of anemia and hyperemia, he states, is on a scale never before realized, revitalizing the parts and promoting absorption of pathologic fluids by its imitation of the natural stimulation of metabolism A tank of compressed air can be used but it is better to have a large amount to use more freely, and he has devised a special apparatus for compressing the air very economically in hospitals where power can be available The apparatus was described in the *Deutsche med Wochenschrift*, Aug 4, 1910, page 1445

73 **Dislocation of Tarsometatarsal Joints**—Grunert has found fifteen new cases on record of dislocation of Lisfranc's joint since Lenormant's compilation of ninety six cases in 1908, and here gives the details of them all with two additional cases from his own experience The luxation was total in fifty eight Reduction by manual pressure succeeded in only 35 per cent of the total 105 cases, but the patient got along well with the uncorrected total dislocation, while the outcome was most disappointing in the operative cases The experiences related indicate that operative interference is liable to do harm ultimately rather than good in the total luxations, but that when only a single bone is dislocated, operative interference is justified and has always proved effectual Any attempt to resect bone merely weakens the foot

75 **Extensive Saline Infusion in Treatment of Peritonitis**—Bertelsmann strives to restore approximately normal conditions in the circulation in peritonitis by saline infusion before he attempts any operation In fourteen cases of peritonitis last year, treatment was by intravenous saline infusion of nearly 4 liters of salt solution before and during the operation Large compresses were laid over the intestines when the abdomen was opened and the abdominal walls were fastened over them with silk sutures in such a way that no intestines could protrude while a broad slit was left open between the lips of the wound After the operation subcutaneous or saline infusion is continued at need up to 20 liters in the first two days By this copious flushing of the vascular system the stagnation in the peripheral vessels is combated and the heart given something to pump on, small amounts of salt solution do not accomplish this He operates in every case of peritonitis, no matter how desperate it may appear. Of the six

fatalities in his series, five were in patients practically moribund when first seen. The only death that had not been expected was in a woman who died of embolism twelve days after the operation. He suggests several queries for further research: 1. The share in peritonitic collapse of the inflammatory congestion, and whether this is to be combated or regarded as a favorable element. 2. Is the collapse during operations for peritonitis due to the fact that the blood rushes into the vessels in the abdomen when all pressure is removed from these vessels, and can this assumption be sustained by experimental research? 3. Does bacteriemia frequently accompany peritonitis? 4. Is existing bacteriemia influenced favorably or unfavorably by saline infusion?

Fortschritte der Medizin, Leipsic

November 3, XXVIII, No. 44, pp. 1377-1408

77 General Anesthesia. (Die Allgemein-Narkose.) P. Sick. Commenced in No. 42.
78 Aneurysm of the Hepatic Artery. D. G. Zesas. Commenced in No. 42.
79 Treatment of Chronic Dyspepsia in Infants. (Therapie der chronischen Ernährungsstörungen des Säuglings.) Sittler.

Jahrbuch für Kinderheilkunde, Berlin

November, LXXII, No. 5, pp. 523-660

80 *Large Doses in Tuberculin Treatment of Children. A. Fuchs.
81 Normal Metabolism and Nitrogen and Sulphur Metabolism in Rachitic Dwarf Growth. (Der Stickstoff- und Schwefelstoffwechsel in Fällen von rachitischen Zwergwuchs und ein Beitrag zum normalen Stoffwechsel eines fünf Jahre alten Knaben.) H. Schwarz (New York).
82 Pathology of Growth in Infancy. (Zur Pathologie des Wachstums im Säuglingsalter.) E. Schloss.
83 Hydronephrosis from Ureter Deformity. E. v. Joukowsky.
84 *Experimental Phosphorus and Strontium Sclerosis. F. Lehnerdt.
85 Tracheotomy in 676 Cases, 1899-1908. J. C. Schippers.

80. **Treatment of Tuberculosis in Children with Large Doses of Tuberculin.**—Fuchs reports the application in a number of cases of Schlossmann's method of accustoming the child to large doses of tuberculin. About two months was all that was needed to bring them to a dose of 1 gm. The results were very disappointing; no benefit was realized in any instance and the impression in some cases was that the tuberculosis was directly aggravated. Injection near the focus of the surgical lesion induced a peculiar and very pronounced cutaneous reaction, evidently an anaphylactic phenomenon, peripheral to the lesion.

84. **Phosphorus and Strontium Sclerosis.**—Lehnerdt's recent experimental research shows the importance of the influence of single elements on the growth of the bones, and opens a comparatively new field for physiologic research and for explanation of the action of drugs.

Medizinische Klinik, Berlin

November 13, VI, No. 46, pp. 1809-1844

86 Anatomic Bases for Physical Diagnosis. R. Oestreich.
87 Biology of Blood in Women During Gestation Period. (Zur Biologie des Blutes in der Gestationsperiod des Weibes.) M. Neu.
88 *Syphilis of Pancreas and Other Organs. J. Fey.
89 *Convulsions in Whooping-Cough. (Zur Frage der Krampfanfälle während des Keuchhustens.) A. Schiller.
90 *Function of Appendix. (Hat der Wurmfortsatz eine Funktion?) Hartig.
91 Resemblance of Features in Foreign Races. (Anähnlichung der Gesichtszüge in fremdem Rassenmilieu.) Lomer.

88. **Syphilis of the Pancreas.**—Fey reports a case of visceral syphilis in which the symptoms from involvement of the pancreas were exceptionally prominent. The patient was a man of 42, otherwise healthy, who acquired syphilis at 21 and took five courses of specific treatment in the course of three years and was free from symptoms for nearly twenty years. Then he had an attack of what seemed to be severe influenza from which he did not seem to recover, and hectic fever, night sweats and cough suggested tuberculosis. There was occasional profuse diarrhea ceasing suddenly after five or six days and, after a year of these symptoms, attacks of pain, most pronounced in the upper abdomen, coming on independent of the intake of food and persisting for one or three hours. Annoying, persistent eructations and enlargement of the liver and spleen, with a little ascites, suggested tuberculous peritonitis. The feces at this time became clay-colored and soft, and sugar was found in the urine. The diagnosis then was changed to carcinoma of the liver, but the symptoms resisted all treatment on these bases and the patient lost nearly a hundred pounds in weight in the course of the eighteen months. Functional tests of the pancreas gave positive findings with the Cammidge and trypsin tests and the Schmidt nucleus test, while the fat content of the stool averaged 39.4 per cent. and a drop of adrenalin in the left eye induced pronounced mydriasis in twenty-five minutes. The diversity of the symptoms, the protracted course of the syndrome, the hectic fever and positive Wassermann reaction convinced Fey that syphilis was responsible for the whole trouble, and under mercurial inunctions and potassium iodid the fever disappeared in three days, the glycosuria in one week, and the liver and spleen returned to normal size in less than a month. The improvement continued to a clinical cure in a few weeks, but the persistence of the Cammidge reaction and positive adrenalin test indicate that the pancreas still has some interstitial pathologic process, although the gummas probably responsible for the severe symptoms previously observed had retrogressed. The syndrome of visceral syphilis is liable to involve the most various organs and thus present a Protean variety of symptoms, never encountered under other conditions.

89. **Convulsions in Whooping-Cough.**—In the first of Schiller's four cases, the convulsions were evidently the result of latent tetany in a female infant, 17 months old, artificially fed. The prompt success of treatment for the spasmophilic diathesis: castor oil, tea, phosphorus-cod liver oil and abstention from milk, with symptomatic measures, confirms the assumption of tetany as the cause of the convulsions, the whooping-cough having continued its course unmodified. In the second case the convulsions were merely a casual coincidence, ushering in severe varicella with otitis media. Measures directed against the fever, cold packs and aspirin, banished the convulsions. This patient was a boy of 3. In the third case the infant began to cough when 4 days old, and at three weeks the closure of the glottis initiating the cough frequently persisted, causing dangerous asphyxia from the laryngospasm. The trouble in this case was an actual complication of the whooping-cough, peculiarly dangerous on account of the suffocation recurring without warning and liable to prove fatal unless the child was watched incessantly. In the fourth case a mustard pack was applied on account of beginning bronchopneumonia in an infant nearly 2 years old, with whooping-cough for six weeks. The child was otherwise healthy, but six hours after the mustard pack, applied according to Heubner's technic, severe convulsions developed, with cyanosis, requiring artificial respiration and rapidly exhausting the child, with high fever and death from heart failure the next day. Ibrahim recently reported fatal convulsions following the mustard pack in a case of whooping-cough. If Schiller had known of this experience he would have applied lumbar puncture in his case to counteract the heat congestion from the mustard pack, superposed on the febrile tendency of the incipient bronchopneumonia.

90. **Function of the Appendix.**—Härtig suggests that the appendix may have an analogous function to the automatic lubricators in automobiles to supply a lubricant at points where it is especially needed. The little reserve of intestinal juice in the appendix may be just what is needed at the bottom of the well formed by the cecum to aid in passing the feces along.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

November, XXXII, No. 5, pp. 517-634

92 Puerperal Bradycardia. J. Novak and L. Jetter.
93 *Varicocele in Pregnant Women. H. Cramer.
94 *Intra-Uterine Respiration. F. Fromme.
95 *Obstetric Auto-Infection. F. Fromme.
96 *Technic for Combined Examination. (Zur kombinierten Untersuchung.) J. Sonnenfeld.
97 Polypous Cysts in Vagina. (Ein seltener polypöser Anhang der Vaginalportion.) H. Peters.
98 Congenital Transmission of Tuberculosis. O. Pankow.
99 Pelvis Manikin. (Ein Modell des weiblichen Beckens.) E. Martin.

93. **Varicocele of Pregnant Women.**—Cramer ascribes the development of varicose veins to primary changes in the walls of the vein under the influence of toxic action. Toxic action from the internal secretions is peculiarly liable to occur in

the pregnant woman and predisposing mechanical causes enhance this tendency. He has noticed that inguinal hernia in women frequently dates from a pregnancy, and he explains this by the spreading of the inguinal canal from the enlargement of the veins passing through it. The stretched canal does not retract again when the enlarged veins subside to normal size. The condition thus left favors development of a hernia. In the male, the varicose enlargement of the corresponding vein occurs outside the inguinal ring, but the corresponding varicocele in women develops in or inside the ring. Since he has been studying this subject he has found complaints of pains in the inguinal region in pregnant women much more common than he had supposed. In one case of the kind the pains were so severe and the disturbances so great that he was compelled to operate, and he gives an illustration of the varicocele removed from each side, at the sixth month of pregnancy. The external ovarian vein was as large as a man's thumb, and was stretching the external inguinal ring so that a finger could be inserted on each side of the engorged vein. There was no tendency to hernia on either side but after resection of the varicocele the tendency of the canal to gape was corrected with sutures as for inguinal hernia, and the pregnancy progressed undisturbed.

94 and 95 **Prophylaxis of Puerperal Fever.**—In the course of a discussion of intra uterine breathing, sterilization of the hands and "self-infection," Fromme reiterates that the greatest progress realized in obstetrics in the last few years is that we have learned to distinguish between puerperal infection and puerperal intoxication He regards infectious puerperal fever as the result of importation from without of virulent alien germs capable of penetrating into living tissue and thus setting up general sepsis. The putrefaction bacilli normally in every vagina are not capable of this. If alien germs from without can be kept completely away from the vagina and uterus shortly before, during and after childbirth, there will be no true infectious puerperal fever. When certain that this is the case, we can be confident that the parturient will recover without severe illness. The woman's own germs are incapable of setting up true puerperal fever, and if fever does occur it is merely an intoxication fever from retained membranes or obstruction to the outflow of the lochia, and it subsides when the substances are rinsed out which have been providing the culture material for the patient's own germs.

96. **Combined Examination.**—Sonnenfeld has found that any means to divert the patient's attention away from the examination generally suffices to induce the desired relaxation of the abdominal walls for "combined examination." He has found that a simple means to divert the attention is to have the patient hook the fingers of her two hands together and pull vigorously. This has frequently succeeded in his experience when other, more complicated measures failed.

Munchener medizinische Wochenschrift

November 8, LVII, No 45, pp 2329-2392

100 Post Mortem Wassermann Reaction C Nauwerck and M Weichert
101 Dungern's Simplification of Wassermann Reaction (Was leistet die v Dungernsche Methode der Syphilisreaktion) A Spiegel
102 Importance of Early Hygiene and Care in Prevention of Nervous and Mental Disease (Bedeutung einer geordneten Säuglings und Kleinkinderfürsorge für die Verhütung von Epilepsie, Idiotie und Psychopathie.) M. Thiemich
103 Idem J Hoppe
104 Advantages of Peroral Intubation for Operations on Face and Throat (Die intratracheale Insufflation von Meltzer—New York und Kuhns perorale Intubation; unsere Erfahrungen über die letztere) E Kohler.
105 Pulmonary Tuberculosis and the Thorax Musculature (Lungentuberkulos [illegible] er
106 Ehrlich's "606" [illegible] hsche Praparat 606 bei [illegible]
107 *Severe By Effects A[illegible] (Blasenstorungen und [illegible] nach einer Injektion vo[illegible]
108 Foreign Body in Lung (Fremdkorperextraktion aus der Lunge) H Seidel
109 *Toxic Hyperkeratosis Ruete
110 Multiple Neuromas on Spinal Roots in Nine Months' Infant. R Graupner

107. **Bladder Disturbances After Use of Ehrlich's "606."**—Eitner reports a case in which an injection of "606" was followed by retention of urine and constipation with abolition of the reflexes, the clinical picture being identical with that of the two cases reported from Prague and mentioned in these columns Sept. 3, 1910, page 898. Eitner never uses methyl alcohol, so that the disturbances cannot be explained in this way, which was the explanation accepted for the Prague cases. He used for the injection a mixture of what was left in two tubes of the "606," the rest of the contents of the vials having been used in another case respectively fourteen and three days previously. The tips of the tubes were fused again to protect the remaining contents, and he thinks that the heat applied in the fusing must have modified the drug within in some way to render it more toxic. Experiments on animals with the "606" after it had been heated seemed to confirm this assumption of a toxic modification of the drug under the influence of heat.

109. **Drug Hyperkeratosis.**—In the first of Ruete's two cases, a man had taken 18 drops of Fowler's solution every day for two years; it had been prescribed originally for herpes and he had not seen a physician since. During the last year keratosis in both hands and feet had developed to a pronounced degree, the palms being covered with wart-like excrescences. The patient was otherwise in good health and free from nervous disturbances. On suspension of the arsenic the skin affection subsided, but it showed a tendency to recur if he took arsenic in any form. There was no melanosis. In the second case the hyperkeratosis was evidently of syphilitic origin and was accompanied by ichthyosis of the back, all subsiding under mercurial treatment.

Virchows Archiv, Berlin

November, CCII, No 2, pp. 161-320

111 Lipoid Pigment of Nerve Cells (Ist das Nervenpigment ein [illegible] Zelle?) M Mühlmann.
112 [illegible] V. Hecht
113 [illegible] the Suprarenals with Kidney Disease (Nebennieren von Tieren und Menschen bei Nierenkrankheiten) W. Nowicki.
114 Obliterating Tuberculous Mastitis A. Ingier
115 Pseudoleukemia and Tuberculosis. A. Lichtenstein.
116 Absorption in the Human Great Omentum S Suzuki
117 Cystic Kidney in the Domestic Animals (Sackniere, perinephritische [illegible] ubkapsuläre Zysten bei den Hausti
118 Histology of [illegible] Kidney. J. Orth.
119 Spontaneous Rupture of the Bladder. (Fall von spontaner Blasenruptur mit Veranderungen der elastischen Substanz im Rupturrande des Peritoneums) T Fileberg
120 Teratoma in Anterior Mediastinum F. Sieber.
121 Dissecting Aneurism of the Aorta G. Morlani
122 Chronic Rigid Spine (Chronische Wirbelsäulenversteifung) G Wehrsig
123 Abnormally Large Parietal Foramens L Plenk.

Wiener klinische Wochenschrift, Vienna

November 10, XXIII, No 45, pp 1583-1622

124 *Defective Development of Testicles (Entwicklungsstorungen der männlichen Keimdrüsen im Jugendalter) J. Kyrle
125 *Transmission of Cretinism from Man to Animals (Uebertragung des Kretinismus vom Menschen auf das Tier.) A. Kutschera
126 Ehrlich's "606" in Syphilis G Riehl
127 Idem O Kren
128 Prostatectomy for Traumatic Hemorrhage H v. Haberer.

124 **Disturbances in the Development of the Testicles in Children.**—Kyrle found only ten apparently normal testicles in 110 child cadavers. In eighty-six cases development was extremely defective. Among thirty-nine children less than a year old, in twenty-nine the testicles showed this striking lack of normal development, showing that it was congenital. In fifty of the cadavers there were other anomalies in development. It is evident, he says, that a child born with undeveloped, unfinished testicles must be on a lower physical plane than the children with normal genital glands, according to the modern conception of the great importance of these glands for the development of the organism as a whole. He describes the histologic findings in detail, with eleven illustrations, this being, he thinks, the first research of the kind on the testicles before puberty.

125. **Transmission of Cretinism to Animals.**—Kutschera found two dogs with every sign of cretinism, including the enlarged thyroid, which were brought up in the bed with a certain pauper and her cretin children. Another dog given the family and sleeping in the same bed developed signs of cretinism in three months, and in nine months the picture of cretinism was complete. Another normal dog given the family at the same time was too large to be taken into bed

with them, and he escaped the cretinism, although he slept in the room Kutschera states that practical experience has confirmed again and again the theoretical premises that cretinism is most liable to develop in small, dirty homes among people who are lacking in a sense for cleanliness and who were exposed to frequent or intimate contact with cretins in early childhood

Zeitschrift fur Urologie, Berlin

November, IV, No 11, pp 809 896

129 Deformed Penis (Zwei seltene Missbildungen der mannlichen Genitale) F Neumann
130 Congenital Stenosis of Male Urethra K R Wilckens
131 *Sarcoma of the Bladder (Zur Statistik und Kasuistik der Blasensarkome) C Munwes

131 **Sarcoma of the Bladder.**—Munwes traces the history of these lesions from 1639 to date, and states that an operation was undertaken in 76 of the 107 cases on record In 14 no operation was attempted and no mention was made of the treatment in the others The growth was a round celled sarcoma in 30 and a spindle celled sarcoma in 16 of the 94 cases in which the structure is mentioned, and the others were in 12 different categories The interval between the first symptoms and the operation was from 3 to 16 years in 15 cases, and from 6 weeks to 2 years in 40 others, the data on this point are not given in the other cases Among the 69 operative cases there have been only 3 patients permanently cured, that is 4 3 per cent free from recurrence for 5 and 13 years to date, 15 patients succumbed to recurrence Two of the permanently cured patients had the growth removed by mere resection of the bladder wall In a personal case described, the patient was a woman of 77, and the alveolar sarcoma was inoperable

Zentralblatt fur Gynakologie, Leipsic

November 12, XXXIV, No 46, pp 1484 1528

132 *Prophylaxis of Air Embolism with Placenta Prævia H Peters

132 **Avoidance of Air Embolism with Placenta Prævia**—Peters is convinced that fatal air embolism is more common than generally believed, especially in private practice with lack of necropsy But about a dozen cases of air embolism with placenta prævia are now on record He had a case of this kind in his own practice, the fatal embolism occurring as he was seizing the foot after version, without anesthesia, on an otherwise healthy woman with wide vagina and nonruptured membranes No means is known to avoid this danger of air embolism unless the version and separation of the placenta can be done *under water*. He thinks that this innovation might ward off all danger from this cause, but he has had no opportunity to apply it himself He suggests that the bath tub could be cleaned with boiling water and alcohol, setting fire to the alcohol, and using boiled water for the bath, no more water is needed than to cover properly the external genitals The inflatable bag could be introduced under water, and the vaginal portion of the uterus could be drawn out of the vulva, which maneuver aids materially in manual separation of the placenta, but has not been applicable hitherto with placenta prævia on account of the danger of air embolism

Gazzetta degli Ospedali e delle Cliniche, Milan

November 3, XXXI, No 132, pp 1393 1400

133 *Nutrient Subcutaneous Injections (Dell alimentazione sostitutiva per via ipodermica) V d Amico

November 6, No 133, pp 1401 1416

134 Lymphogranuloma G Serafini

November 8, No 134, pp 1417 1424

135 Suggestion for Experimental Research on Spermatozoa as Possible Causal Agents of Cancer (Nuovo studio sperimentale sull origine dei tumori) P. Meloni

133 **Subcutaneous Nutrient Injections**—D'Amico states that the experiences to date show that subcutaneous nutrient injections are the only rational and effective means for supplying nourishment, except by the natural route He thinks that the only absolutely efficient substance for the purpose is fresh, fertilized yolk of egg This contains the substances required, and in the proper combination He adds to the yolk 5 gm of 1 per cent iodized glycerin and 5 gm of physiologic salt solution The mixture is injected into the buttocks, the glycerin has a special iniolytic action while the salt solution favors the assimilation of the mass and the iodin stimulates phagocytosis and cell functioning His experiences have been uniformly favorable with this technic during the four years in which he has been applying it The local swelling rapidly subsides Symptoms of uricemia were observed in only a few cases, including that of a child with tuberculous lesions, there seems to be an excess of uric acid in the blood in the tuberculous In case it is necessary to supply fluids without demands on the alimentary canal, he has found diluted Trunecek's serum best adapted for the purpose This contains the salts normally in the blood, the formula being sodium sulphate 0 44, gm , sodium chlorid, 4 92, sodium phosphate, 0 15, sodium carbonate, 0 21, potassium sulphate, 0 4, and distilled water to 1,000 gm In a hundred cases of uncontrollable vomiting, this technic of injection of the yolk of eggs, supplemented by 1,000 gm of the Trunecek serum, the latter repeated as needed, has often been followed by actual resurrection in the most desperate cases Even when the patients were apparently moribund, in some cases, life was prolonged for from five days to two months

Riforma Medica, Naples

October 31, XXV, No 44, pp 1205 1232

136 Treatment of Gastric Disease (Terapia delle gastropatie dinamiche, ipersecretive ed ipercloridriche IX) G Rummo
137 The v Pirquet Tuberculin Reaction (Cutireazione del Pirquet) L Mazzetti

Norsk Magazin for Lægevidenskaben, Christiania

November, LXXI, No 11, pp 1133 1266

138 *Radium Emanations and Endemic Goiter (Det endemiske strumas aetiologi) B Ebbell
139 Gangrenous Ecthyma K Grøn
140 *Tuberculosis of the Kidneys (Tuberculosis renum) C Johannessen
141 Operative Treatment of Glaucoma (Iridotasis antiglaucomatosa) J Borthen
142 Histologic Study of the Heart Musculature S Widerøe
143 Digitalis and Camphor in Croupous Pneumonia N A Quisling

138 **Etiology of Endemic Goiter**—Ebbell calls attention to the fact that goiter seems to be endemic in the regions and the geologic formations where there seems to be the greatest radio activity This has convinced him that the radium emanations may be responsible for development of endemic goiter, this assumption being sustained by the fact that boiling the water, which annuls its radio activity, seems to prevent the tendency to development of goiter He has no opportunity for experimental research in this line and he asks others to give animals radio active water exclusively for a period of three months at least to determine the effect on their thyroids

140 **Tuberculosis of the Kidney.**—Johannessen accepts the possibility of spontaneous recovery from tuberculosis of the kidney—several such cases are on record, but the rarity of this occurrence does not permit reliance on it He gives the details of a number of instructive cases The subjective and objective symptoms may vary within a wide range and the tuberculous process in the kidney may run an entirely latent course for a long period, without any subjective or objective symptoms This explains why tuberculous nephritis often is not diagnosed until it has reached a comparatively advanced stage In other cases pains and hematuria bring the patient to the physician in an early stage In some cases the first symptoms are pollakiuria with frequent micturition or even incontinence Guisy noted pollakiuria as the only symptom of incipient kidney tuberculosis in six out of thirty one cases, in three cases nocturnal incontinence of urine was the first sign of trouble This may be the result of what Guyon calls reno cystic reflex action The kidney is generally enlarged, but may sometimes be abnormally small, in the beginning the kidney is not palpable as a rule In the incipient stage there may be a dull or vague pain of varying intensity and apparently spontaneous, localized in one of the lumbar regions, sometimes the sound side, or paroxysmal severe pain, radiating down to the bladder or to the other kidney or up into the shoulder The urine may be limpid and acid without albumin In one of the cases reported the urine was pathologic but the bladder seemed entirely normal In another the severe pains were localized in the left side while the right

was the diseased kidney. In another case the pains developed suddenly in the night, radiating to the bladder and urethra and accompanied with vomiting and chills. This pseudocolic recurred three or four times in two or three months, the patient having no pain in the intervals. One patient was a young man, apparently healthy until he noticed pollakiuria for two months, and then the pseudocolic above mentioned. Now, five months after nephrectomy, he seems in the best of health. In the case of a woman of 28 a similar sudden nocturnal pseudocolic was the very first sign of trouble.

Ugeskrift for Læger, Copenhagen

November 3, LXXII, No. 44, pp. 1333-1364

144 Radium Emanations in Uricacidemia. H. Jansen.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

MODERN TREATMENT. The Management of Disease with Medicinal and Non-Medicinal Remedies. [illegible] American and Foreign Authorities. Edited by [illegible] M.D., Professor of Therapeutics and Materia Me[illegible] College, Philadelphia. Assisted by H. R. M. Landis, M.D., Director of the Clinical [illegible] Institute (University of Pennsylvania). [illegible] Cloth. Price, $6 net. Pp. 930, with 105 [illegible]: Lea & Febiger, 1910.

DIE FRANKENKOST. Ein praktisches Handbuch für Aerzte, Kranken- und Wohlfahrtsanstal[illegible] [illegible]egepersonen, Erziehungsanstalten und für die [illegible] Kieslinger, Wien. Verfasserin mehrerer, zun[illegible] Kochbücher, und Dr. Karl Wirth, Wien, ehem. [illegible]lg. Krankenhauses. Paper. Price, 3.60 marl[illegible] : J. F. Lehmanns Verlag, 1910.

THEORIE UND PRAXIS DER INNEREN MEDIZIN. Ein Lehrbuch für Studierende und Aerzte. Von Dr. Erich [illegible] Erster Band. Die Krankheiten der Zirkulation [illegible] Cloth. Price, 7 marks. Pp. 404, with 4[illegible] Karger, 1911.

CIVICS AND HEALTH. By William H. Allen, Secretary, Bureau of Municipal Research. With an Introduction by William T. Sedgwick, Professor of Biology in the Massachusetts Institute of Technology. Cloth. Price, $1.25. Pp. 411, with illustrations. Chicago: Ginn & Co., 1910.

FEVER-NURSING. Designed for the use of Professional and other Nurses, and especially as a Text-Book for Nurses in Training. By J. C. Wilson, M.D., Author of "A Treatise on the Continued Fevers." Cloth. Price, $1 net. Pp. 248. Philadelphia: J. B. Lippincott & Co., 1910.

DIE WASSERMANN'SCHE REAKTION. Mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. Von Dr. Harald Boas, Privatdozent an der Universität. Mit einem Vorwort von Prof. A. Wassermann. Paper. Price, 5.60 marks. *Pp. 186.* Berlin: S. Karger, 1911.

DIAGNOSTIK DER [illegible] Von Dr. L. E. Bregman, Oberarzt am städtis[illegible] Warschau. Mit einem Geleitwort v[illegible] Paper. Price, 12 marks. Pp. 535, [illegible] S. Karger, 1911.

A GUIDE TO READING IN SOCIAL ETHICS AND ALLIED SUBJECTS. Lists of Books and Articles Selected and Described for the Use of General Readers. By Teachers in Harvard University. Boards. Price, $1.25. Pp. 265. Cambridge: Harvard University, 1910.

DISEASE OF THE PANCREAS. Its Cause and Nature. By Eugene L. *Opie, Professor of Pathology, Washington University, St. Louis.* Second Edition. Cloth. Price, $3. Pp. 387, with 47 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

THE NEED OF REVISING MORALS AND LAWS. A Lecture Delivered at the Royal Albert Hall, London, May 6, 1910. By Lady Cook (née Tennessee Claflin). Paper. Price, 1 penny. Pp. 19. London: Hayman, Christy & Lilly, 1910.

NEW JERSEY TRAINING SCHOOL FOR FEEBLE-MINDED GIRLS AND BOYS. VINELAND, CUMBERLAND COUNTY, 1910. Twenty-Second Annual Report. Paper. Pp. 103, with illustrations. E. R. Johnstone, Supt., Vineland, N. J.

HOW TO COOK FOR THE SICK AND CONVALESCENT. Arranged for the Physician, Trained Nurse and Home Use. By Helena V. Sachse. Fourth Edition. Cloth. Price, $1.25 net. Pp. 337. Philadelphia: J. B. Lippincott, 1910.

FORTIETH ANNUAL REPORT OF THE CENTRAL STATE HOSPITAL OF VIRGINIA (PETERSBURG). For the Fiscal Year Ending September 30, *1910. Paper. Pp. 95, with illustrations.* William Francis Drewry, M.D., Superintendent.

THE MODERN VIEW OF SYPHILIS AND ITS TREATMENT. By Gustav Baar, M.D., Member German Congress for Internal Medicine. Cloth. Price, $2 net. Pp. 285. New York: D. Appleton & Co., 1910.

THE THIRD ANNUAL REPORT OF THE COMMISSIONER OF HEALTH OF THE COMMONWEALTH OF PENNSYLVANIA. 1908. Cloth. Pp. 1339. Samuel G. Dixon, Commissioner of Health, Harrisburg, Pa.

THE PHYSICIAN'S VISITING LIST (LINDSAY & BLAKISTON'S) FOR 1911. Leather. Price, $1.25. Twenty-five patients per week. Philadelphia: P. Blakiston's Son & Co., 1910.

New Patents

Recent patents of interest to physicians:

961840. Vegetable hair tonic. John G. Burgess, San Diego, Cal.

962004. Indicating bottle. William T. Cassidy, Chicago.

962313. Vaginal irrigating syringe. Henry W. Champlin, Walters Park, Pa.

962316. Can-cap dropper. Elmer M. Cobb, Portland, Maine.

961936. Machine for making capsules. Arthur Colton and B. W. Scott, Detroit.

961760. Making alkali thiosulfates. Louis Destree, Haren, Belgium.

961848. Machine for granulating magnesia. Ubaldo Di Marco, Hawthorne, N. J.

961945. Manufacture of bicarbonate of soda. R. H. F. Finlay, Belfast, Ireland.

962218. Aseptic needle-thread holder for surgical use. Maurice G. *Heitz-Boyer, Paris, France.*

962380. Surgical attachment for cots or beds. Eddie E. McMahon, Denver.

962103. Making pure ortho and para-guaiacol sulfonic salts. Bruno R. Seifert and H. Hahle, Radebeul (near Dresden), Germany.

962170. Making silicon nitrid. Alf Sinding-Larsen, Christiana, Norway.

962067. Receptacle having apparatus for projecting disinfecting materials, etc., into it. Charles Waldstein, Cambridge, *England.*

962809. Sterilizer. *Sophia Blickman,* New York.

962617. Inhaler. Ignazio Bucceri, Brooklyn.

962999. Portable fountain syringe. Artemas L. Dawson, Devall Bluff, Ark.

962753. Making a neutral sodium salt of lactalbumin. Ernst Fischer and P. Bergell, Berlin, Germany.

962952. Extension obstetrical instrument. Leonard Gosgorn, Waco, Texas.

962901. Massage apparatus. Henry C. Karpenstein, New York.

962657. Syringe. Patrick J. McElroy, Cambridge, Mass.

962790. Scleroscope. Albert F. Shore, New York.

962595. *Hanging receptacle for medicines and the like. Johnny B.* Smith, Johannesburg, Transvaal.

962872. Soluble perfume tablet. Russell W. Whitlatch, Brooklyn.

963529. Water purifier. Frederick Dinghaus, Puerto Barrios, Guatemala.

963538. Invalid-bed. John B. Ford, Jeffersontown, Ky.

963051. Ointment applier. Robert A. Kooken, Fort Worth, Texas.

963454. Sputum-cup and holder therefor. Christian W. Meinecke, Jersey City, N. J.

963244. Sterilizing milk. Cassius C. Palmer, Cranford, N. J.

963469. Truss. Charles Pence, Galena, Kan.

963174. Making concentrated sulfuric acid. Otto Proelss, Kansas City, Mo.

963175. Making sulfuric acid. Otto Proelss, Kansas City, Mo.

963179. Pocket atomizer. Royal F. Richards, Los Angeles.

963254. Phenol sulfonate of opium alkaloids. George L. Schaefer, Brooklyn.

963726. Combined sterilizer and water-heater. Elbridge G. Stamper, Paducah, Ky.

963482. Vaginal syringe. Ida L. Stevens, St. Louis.

963664. Sanitary cuspidor. Michael F. Troy, Brooklyn.

963492. Disinfector and deodorizer. Joseph, W. H. and F R. Williams, Sharpsburg, Pa.

964406. Packing for metal canulas, or the like. Carl F. Dewitt, Berlin, Germany.

964156. Making haloids. James C. Graves, Midland, Mich., and J. P. Simons, Cleveland.

963890. Jury and jury-frame for orthopedic treatment. Gustave W. Haas, Los Angeles.

964105. Adjustable bed. Daniel Hogan, Hoboken, and C. W. Meinecke, Jersey City, N. J.

964267. Sanitary napkin, and belt for supporting the same. James H. Johnson, Washington, D. C.

963899. Surgical clamp. Samuel L. Kistler, Los Angeles.

964110. Mouth speculum. John F. Koehler, Sawyer, Mich.

964170. Physician's table. Charles N. Leonard, Indianapolis.

963796. Artificial foot and ankle joint. E. Mueller, Reserve Township, Pa.

963797. Artificial limb. E. Mueller, Reserve Township, Pa.

963933. Eye-cup. William J. O'Neill, Chicago.

964309. Obstetrical appliance. Jennie D. Parrott, Washington, D. C.

964312. Vibrator. Carl A. Pfanstiehl, Highland Park, Ill.

964730. Faucet syringe. Charles F. Ackerman, Cleveland.

964950. Hypodermic syringe. Albert A. Allinger, New York.

964838. Sterilizing hopper. Arthur C. Badger, Newton Center, Mass.

964898. Movement cure apparatus. Theodor Budingen, Constance, Germany.

965079. Mouth-speculum. Henry E. Caswell, Jeffersonville, Ohio.

964492. Oxygen-generator. Monroe S. Clawson, New York.

964769. Syringe. James H. L. Eager, New York.

964903. Syringe. John L. Fisher, Providence, R. I.

964964. Indurated casein compound. Byron B. Goldsmith, New York.

965137. Indurated albuminoid compound. Byron B. Goldsmith, New York.

964777. Pasteurizing apparatus. James W. Heizer, Wheeling, W. Va.

964779. Bath cabinet. Adolph M. Holaday, Walthena, Kan.

964559. *Disinfecting apparatus.* William H. Rose, New York.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV, No. 26 Chicago, Illinois December 24, 1910

THE IMPORTANCE OF A LOW PROTEIN DIET IN CHRONIC NEPHRITIS*

H. D. ARNOLD, M.D.
Assistant Visiting Physician, Boston City Hospital
BOSTON

In planning a diet for chronic nephritis three cardinal principles must determine our selection of food.

First, the amount of protein food must be limited. Since the power of the kidneys to eliminate nitrogenous material is impaired, the amount of such material ingested must be limited to what the kidneys can readily take care of. This necessitates the careful regulation and limitation of the amount of protein food ingested.

Second, a sufficient amount of nutrition must be furnished. Notwithstanding the limitation of protein food, it is essential that sufficient nutriment should be supplied for all needs of the organism. The diet must have a sufficient caloric value, and the loss from limitation of the protein food must be made up by a corresponding increase of the fats and carbohydrates. The caloric value of the diet is of less importance in the more acute stages of acute nephritis, or in acute exacerbations of chronic nephritis. Here, as in all acute diseases, no harm results if the diet for a number of days has a caloric value considerably less than is demanded by the needs of the organism. But in dealing with a chronic condition which may last for months or years, a sufficient number of calories must be furnished or else the body deteriorates from slow starvation.

Third, variety must be provided. No matter how satisfactory a given diet may be, it cannot be strictly maintained for a long time without the patient becoming so tired of it that he rebels. In a diet for a chronic disease, variety is absolutely essential. It must be provided wisely, or the patient will himself vary his diet, and will probably do so foolishly.

LIMITATIONS OF PROTEIN FOOD

It is safe to say that an average adult in health does not need more than 90 gm. of protein in his food daily. It is known from the investigations of Chittenden and others that a person leading an active life can get along and maintain a condition of health and strength over prolonged periods on about half that amount of protein.

For practical purposes I have taken 90 gm. of protein a day as the maximum for cases of chronic nephritis, above which it is unnecessary to go, and have taken 50 gm. as the minimum, below which it is undesirable to go. These are not absolute limits, for I have had patients in a quiescent stage of chronic interstitial nephritis who exceeded 90 gm. without apparent injury. On the other hand in some advanced cases the patients have done well on less than 50 gm. of protein in a day over long periods.

Practically, then, in the severer or advanced cases of chronic nephritis we limit the ingestion of protein to 50 gm. daily. In proportion as the case is less severe we allow more protein, taking 90 gm. as the maximum for the slight or inactive stages of the disease.

CALORIC VALUE OF THE DIET

As has been already stated, the diet in a chronic disease must provide a sufficient number of calories to meet the requirements of the system for heat, energy, etc. Roughly speaking, an average adult needs 2,000 calories in twenty-four hours if at rest (as a patient in bed), 2,500 calories for light activity, and 3,000 calories for moderate activity. Three thousand calories may be taken as the maximum, for in few cases of chronic nephritis are the patients warranted in doing an amount of work that requires more than that.

It will be found practically that individuals differ considerably in their demands in this respect. For example, I have had a number of patients who have been going about and leading a life of light activity, yet maintaining their weight, strength, and general condition of health on 1,500 to 2,000 calories. It is a mistake to force such patients against their inclination to take 2,500 calories or more, simply because it seems to be demanded on theoretical grounds. The maintenance of the weight, strength, and the general condition is a satisfactory practical test of the efficiency of the diet.

Loss of strength and energy and a marked feeling of lassitude are symptoms frequently complained of by these patients. This arises in part from insufficient nutrition, when the patient has a distaste for food, but also in many cases from the ingestion of too much protein in the food. For the waste products of protein metabolism, which the kidneys fail to eliminate, are largely the cause of these sensations and also of the extreme nervousness that is often present. It is extremely gratifying to see these symptoms diminish and disappear when, through the limitation of the protein food, the kidneys can remove the accumulations of waste material of this sort. The loss of appetite also seems to be caused by the excess of this waste material, for with its removal the appetite returns.

We often find patients going through cycles of alternating anorexia and good appetite. It is Nature's attempt to regulate the protein intake. When there is an excess of the waste products from protein food, anorexia ensues and the supply is cut down. When the excess has been removed, the appetite returns, often whetted by the resulting lack of nourishment. But unless the diet is properly proportioned, an excess of protein is quickly taken, and anorexia again ensues. This process is sometimes exaggerated through the belief on the part of the patient or physician that the feeling of weakness is to be combated by meat, eggs and milk, because of their reputed strength-giving properties.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

An increase in the amounts of these foods, relatively rich in protein, simply makes the condition worse instead of better, whereas most gratifying results are often obtained by diminishing the amount of protein ingested, provided sufficient energy is furnished by the other foodstuffs (fats and carbohydrates).

I may allude in passing to the danger in these cases of the fad of the free use of soured milk. If soured milk replaces other protein food, no harm is done. If, because the patient dislikes soured milk, less protein is taken, a distinct benefit may result. But I have seen distinct harm from the addition to a diet already rich in protein of a pint to a pint and a half of soured milk, representing an addition of 20 or 30 gm. of protein a day.

INADVISABILITY OF THE MILK DIET

It was formerly taught that the ideal diet for nephritis, chronic as well as acute, was a strictly milk diet. If other things were allowed in cases of chronic nephritis, it was not because they were considered more desirable. but because it was found practically that the patients would not adhere strictly to this diet for months at a time. Many physicians to-day are trying their best to keep patients with chronic nephritis as close as possible to a strict milk diet. Von Noorden was one of the first to point out a few years ago the fallacy of this line of treatment.

The objection to the exclusive milk diet lies in the fact that, if sufficient nutriment is to be supplied, an excess of protein must be given, whereas the protein should be diminished in order to spare the kidneys. This is easily demonstrated. Each 100 c.c. of milk contains approximately 4 gm. of protein and furnishes about 70 calories. Let us take 2,100 calories as a convenient number to represent the caloric need of an average patient. As each 100 c.c. furnishes 70 calories, it will require 30 times 100 or 3.000 c.c. to furnish 2,100 calories. In this there will be 30 times 4 gm. of protein, or 120 gm. It has been shown that 90 gm. is the maximum, above which we should not go; therefore, if enough milk is given to furnish a proper amount of nourishment, at least one-third more protein must be given than the maximum amount allowed under the most favorable conditions.

PROTEIN QUOTIENT

It is evident that an article of food is desirable in chronic nephritis according as it furnishes a large number of calories, and yet contains a small number of grams of protein, provided, of course, that it is easily digested and assimilated, and is acceptable to the patient.

I have found it convenient to classify the foods containing protein on this principle. I have used the word "protein quotient" to represent the number of calories furnished by a food for every gram of protein it contains. The protein quotient is the quotient obtained by dividing the calories furnished in a given amount by the number of grams of protein it contains. For example, since 100 c.c. of milk contain 4 gm. of protein and furnish 70 calories, therefore the protein quotient for milk is 70 divided by 4, or 17½, indicating that 17½ calories are obtained for every gram of protein in milk.

We may speak of the protein quotient of a diet. For example, if a diet contains only 50 gm. of protein yet furnishes 2,000 calories, its protein quotient is 40. Or if 90 gm. of protein is allowed for 2,000 calories the protein quotient would be 22 2/9. In chronic nephritis, then, the protein quotient will range from 22 to 40, and the more severe the case the higher should the protein quotient be.

Table 1 gives a list of the common articles of food arranged according to their protein quotients.

TABLE 1.—COMMON ARTICLES OF FOOD ARRANGED ACCORDING TO THEIR PROTEIN QUOTIENT

Cream (30%)	85.7	Fat ham	33⅓
Bacon	60.0	Mutton and pork	23⅓
Cake	58.0	Custard	20.0
Cream (20%)	57.0	Baked beans	18.0
Mashed potato	55.0	MILK	17½
Rice (boiled)	50.0	Soup (purée)	16⅔
Chocolate	46.0	Butter beans	16.0
Potato	45.0	Cheese (full cream)	16.0
Pudding (simple)	44.0	Lima beans	15.0
Zwieback	40.0	Green peas	14.0
Crackers	39.0	Buttermilk	13⅓
Shredded Wheat	35.0	"PROTEID PORTION"	12½
Parsnips	35.0	Fat meat	12.5
"CEREAL PORTION"	35.0	Egg	11.5
Green corn	33⅓	Scrambled egg	11.5
Cereal (cooked)	30.0	Fish chowder	11.0
Macaroni (cooked)	30.0	Oysters	8⅓
Bread	28.0	Lean meat	6.0
Gruel (milk)	25.0	Fish	6.0
Cocoa	25.0	Lobster	5.0
Beets, carrots	25.0	Beef juice	5.0
Onions, squash	25.0	White of egg	4.0
"Vegetables"	20.0		

TABLE 2.—COMMON ARTICLES CONTAINING NO PROTEIN

One Hundred Grams of Food.	P.	F.	C.	Cal.	Common Measures.	P.	F.	C.	Cal.
Butter	..	85	...	800	Fat (⅓ oz.)	..	9	..	80
Olive oil	..	100	...	900	Tablespoon	..	15	..	125
Sugar	..	...	100	400	Teaspoon	..	..	6	25
Sweet fruits.	..	...	10	40	One-fourth lb.	..	..	12	50

* P, protein; f, fat; c, carbohydrate.

THE NEED OF DIET CHARTS OR TABLES

It is evident that, if these principles are to be applied in arranging the diet of a patient, certain data must be at hand in reference to the composition of different foods and their caloric value. Without these data, scientific regulation of the diet is impossible. This information may be obtained from Atwater and Bryant's tables,[1] or from tables now published in many books on dietetics and in some books on treatment. I presented to the profession a year ago a convenient diet chart,[2] which contained the statistics for the common articles of food, together with a brief summary of the principles of dietetics. The values given in this chart are approximate only, but are sufficiently accurate for practical use. They are taken as the basis of calculations in this paper. The chief value of the chart is its convenience. With such tables a diet containing the proper amount of protein and at the same time furnishing the desired number of calories can be constructed.

VARIETY, PROTEID PORTIONS, CEREAL PORTIONS

It was found that the third requirement was variety, in a diet that is to continue for a long period. The problem is to furnish variety and a sufficient amount of nutriment, and yet to regulate the amount of protein and prevent it from exceeding a given amount.

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[1] The Chemical Composition of American Food Materials, Bul. 28, U. S. Dept. Agric. Off. Exper. Stations, Wash. (Revised edition).

[2] A Practical Diet Chart, Massachusetts Med. Soc., 1909; Boston Med. and Surg. Jour., Sept. 30, 1909, p. 457. These diet charts are now published by W. B. Saunders Co.

If the percentage of protein in different articles of food is known, it can easily be calculated what amount of each article will furnish a given quantity of protein. From our present point of view, these various amounts of the different articles may be regarded as equivalent one to another, and may be substituted for each other. I have designated these equivalent amounts of food as "portions." For example, milk contains 4 per cent. of protein, eggs 13 per cent., and meat 20 per cent. Therefore 100 gm. of milk would furnish 4 gm. of protein, the same amount of egg 13 gm., and of meat 20 gm. One egg weighs on the average 2 ounces, or 60 gm. Therefore it will contain approximately 8 gm. of protein. It would require 200 gm. (or c.c.) of milk to furnish 8 gm. of protein, but the same amount would be supplied by 40 gm. of meat. Therefore one egg may be regarded as equivalent to 200 c.c. of milk or 40 gm. of meat, and each of these amounts is one "portion." These albuminoid substances, known as proteids, and other similar articles which are relatively rich in protein are conveniently grouped together. Portions in this group are designated as "Proteid Portions," and the unit is 8 gm. of protein, the amount of protein contained in one egg. In a similar way bread contains on the average 9 per cent. of protein, boiled rice 2 per cent., and cooked cereals 2 per cent. It is found that an average slice of bread weighs about 40 gm. and contains about 4 gm. of protein. Two hundred gm. of boiled rice or cooked cereal would furnish the same amount. A number of the staple articles of food are grouped together on this basis of 4 gm. of protein to each portion, and for convenience these are called "Cereal Portions." Each cereal portion, containing 4 gm. of protein, contains half as much protein as the proteid portion, which has 8 gm.

TABLE 3.—PROTEID PORTIONS

Under this head are included the common articles of food that are relatively rich in protein. Each "portion" contains 8 grams of protein—the amount in one egg. Therefore, in calculating the amount of protein in a diet, one portion is equivalent to another. Variety may be secured by substituting one portion for another which has been ordered in a diet.

Each of the following amounts constitutes one proteid portion:

P.	F.	C.	Cal.		
8	5.5	....	80	Egg.	One.
8	8.0	8.0	140	Milk.	One "glass" (200 c.c.). (A tumbler or coffee cup 4/5 full.)
8	1.5	13.0	100	Buttermilk.	One-half pint. (A tumbler or coffee cup *full.*)
8 8	2.0 to 8.0	....	50 100	Meat or fish.	One and one-third oz. (40 grams). One oz. is the amount of meat in the lean part of a lamb chop; or 1 cubic inch of meat or fish. If steak or fish is 1/2 inch thick, surface would be 2x1 inches.
		Varies with amount of fat.			
8	10.0	1.0	120	Cheese.	One oz. (30 grams).
8	6.0	1.0	90	Scrambled egg, or omelette.	One and one-third tablespoons (80 grams).
8	3.0	8.0	90	Fish chowder.	One hundred grams (3 1/3 oz.).
8	5.0	13.0	130	Puree soup.	One-half pint.
8	7.0	16.0	160	Custard.	Four and one-half oz. (a small cup) (130 grams).
8	19.0	29.0	320	Ice cream	Five oz., a small cup, or rather large serving (160 grams).
8	2.0	3.5	65	Oysters.	Eight average-sized (each weighing 10 grams, or 1/3 oz.). (One oyster of this size contains 1 gm. protein.)
				Clams.	Same as oysters, according to size.
8	5.0	5.0	100	Average proteid portion (P. P.).	

TABLE 4.—CEREAL PORTIONS

The articles of food in this table are less rich in protein than those included under the head of proteid portions, but they are staple articles of food and a considerable part of the protein of the food is derived from them. The amount of protein in each cereal portion is 4 grams—the amount is a fairly thick slice of bread. Thus a cereal portion contains half as much protein as a proteid portion. Calculations and substitutes may be made in the same way as with proteid portions.

Each of the following amounts constitutes one cereal portion:

P.	F.	C.	Cal.				
4.0	0.5	24	115	Bread.	One and one-third oz. (40 grams). One slice of an average-sized loaf; 1 tea roll; ½ breakfast roll; 1 muffin.		
4.0	6.0	40	230	Cake.	Average piece 2 oz. (60 grams).		
4.5	4.0	28	165	Crackers.	One and one-third oz. (40 grams). (Weigh different kinds.)		
3.0	0.5	22	100	Shredded Wheat.	One biscuit.		
4.0	5.0	30	175	Pudding.	Simple puddings (bread, rice, Indian, tapioca, cornstarch), one serving, 3⅓ oz. (100 grams).		
4.0	10.0	38	250	Pie.	Average piece (100 grams).		
4.0	....	40	180	Potato.	Two moderate-sized,	200 grams,	1 potato = ½ C. P.
4.0	6.0	36	220	Mashed potato.	3 tablespoons.	200 grams.	1 tablespoon = ⅓ C. P.
4.0	....	12	60	Butter beans.	2 tablespoons.	40 grams.	1 tablespoon = ½ C. P.
4.0	....	11	60	Lima beans.	2 tablespoons.	50 grams.	1 tablespoon = ½ C. P.
4.0	....	10	60	Peas.	2 tablespoons.	60 grams.	1 tablespoon = ½ C. P.
4.0	....	27	125	Green corn.	3 tablespoons.	140 grams.	1 tablespoon = ⅓ C. P.
4.0	1.0	24	120	Cereal (cooked).	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	1.0	33	160	Corn Flakes, etc. (dry cereals).	8 tablespoons.	40 grams.	1 tablespoon = ⅛ C. P.
4.0	....	48	200	Rice (boiled).	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	2.0	21	120	Macaroni.	4 tablespoons.	140 grams.	1 tablespoon = ¼ C. P.
4.0	2.0	21	120	Vermicelli.	4 tablespoons.	140 grams.	1 tablespoon = ¼ C. P.
4.0	....	30	140	Parsnips.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Carrots.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Squash.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Turnips.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Onions.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	1.0	30	140	Average cereal portion (C. P.).			

Table 3 gives a list of proteid portions, and Table 4 gives a list of cereal portions. In these two tables are included all the more common articles of a mixed diet, and from them sufficient variety may be obtained to satisfy any reasonable person.

The regulation of the amount of protein ingested is easy by means of these portions. We can order a certain number of proteid portions (P.P.) and a certain number of cereal portions (C.P.) and know with sufficient accuracy just how much protein the patient gets, although he may be given free choice of all the articles in these lists. For example, if it is desired to give the patient 60 gm. of protein in a day, 4 P.P. (4×8=32) and 7 C.P. ($7\times4=28$) can be ordered; or 5 P.P. ($5\times8=40$) and 5 C.P. ($5\times4=20$). If the patient is ordered 5 P.P., he might take 2 eggs, one glass of milk, and 2 lamb chops; or one egg, one portion (40 gm.) of fish, 80 gm. of meat, and a cup of custard; or any other combination to make up 5 P.P.; yet from these 5 P.P. he will always get 40 gm. of protein. From the 5 C.P. he will get 20 gm., and the total will always be 60 gm., whatever the combination.

Variety and the regulation of the amount of protein, having thus been provided for, it must next be considered how this scheme affects the problem of the amount of nutrition—the total calories for the day. For, although each portion contains the same amount of protein, the number of calories varies considerably. For example, 1 P.P. of lean meat furnishes only 50 calories, while 1 P.P. of ice-cream furnishes 320 calories; or 1 C.P. of butter beans furnishes 60 calories, while 1 C.P. of cake gives 230 calories. These seem wide variations, but when a person is changing the diet rather frequently he comes pretty near the average figures given in the tables. Sufficient accuracy will therefore be attained by counting each proteid portion as 100 calories and each cereal portion as 140 calories.

THE METHOD OF PLANNING A DIET

The number of grams of protein that the patient should have must first be determined according to the severity of the case. Then the number of calories the diet should furnish must be decided. This is determined by a consideration of the normal weight of the patient and the amount of his activity.

An adult requires in twenty-four hours:

At rest	14-16 calories per pound of normal weight.
At light work	16-18 calories per pound of normal weight.
At moderate work	18-20 calories per pound of normal weight.

Roughly stated, an average-sized man requires:

At rest	2,000 calories in 24 hours.
At light work	2,500 calories in 24 hours.
At moderate work	3,000 calories in 24 hours.

Let us suppose, for example, that it is desired to prescribe a diet which contains 70 gm. of protein and furnishes 2,000 calories. It is desirable to prescribe a certain amount of cream in such a diet, both because it is an acceptable article of food and because of its high caloric value and relatively low amount of protein.

	P.	F.	C.	Cal.
Cream, 20 per cent., 1 oz.	1	6	1	60.
Cream, 30 per cent., 1 oz.	1	9	1	90.

Each ounce of cream contains 1 gm. of protein. A patient can readily take from 2 to 6 or 8 ounces of cream daily.

In planning a diet for a given number of grams of protein, the first number lower that is divisible by four is selected. This number of grams, being a multiple of four, can be provided for from the proteid portions and cereal portions. The number of grams above this is furnished by cream, each ounce of cream furnishing 1 gm. All the protein has now been provided for and no more can be added. The number of calories which have already been furnished are calculated and then the balance is provided for by articles which do not contain protein, such as butter, sugar, fruit, etc. These articles and their composition and caloric values are given in Table 2.

For example, it is desired to get 2,000 calories from a diet containing only 70 gm. of protein. The first number below 70 that is divisible by 4 is 68. Therefore 2 ounces of cream are ordered and the remaining 68 gm. are divided among the proteid and the cereal portions. If 5 P.P. is tried, that furnishes 5 times 8 or 40 gm. of protein, and there are 28 gm. left, which would be provided for by 7 C.P. Now 5 P.P. furnish on the average 500 calories, 7 C.P. furnish 980 calories, and 2 ounces of 20 per cent. cream furnish 120 calories. This provides for 1,600 calories. Since 2,000 calories are wanted and no more protein can be given, 400 calories must be obtained from non-protein foods. One ounce of butter would furnish 240 calories, 250 gm. (half a pound) of sweet fruit would give 100 calories, and 3 teaspoonfuls of sugar would give 75 calories. The total is 415 calories, or 15 calories more than is needed. It is not difficult to calculate such a diet.

This diet is tabulated in Table 5:

TABLE 5.—DIET FURNISHING 2,000 CALORIES WITH 70 GRAMS PROTEIN

	P	F.	C.	Cal.
5 P.P.	40	25	25	500
7 C.P.	28	7	210	980
Cream, 20%, 2 oz.	2	12	2	120
Butter, 1 oz.	..	27	...	240
Sweet fruits, 250 gm.	..	..	25	100
Sugar, 3 teaspoonfuls	..	..	18	75
Total	70	71	280	2015

The diet may be varied further by the addition of any of the so-called "fodder-vegetables," which include asparagus, string beans, Brussels sprouts, cabbage, cauliflower, celery, cucumbers, greens, lettuce, pumpkin, radish, rhubarb, spinach and tomatoes. These do not in themselves furnish enough protein or nourishment to count. They are, however, acceptable to the taste, they add to the volume of the meal, and they offer a ready method of introducing butter or oil in the diet. They may be taken in such amounts and variety as are desired, provided they are easily digested.

This diet may be reduced to ordinary terms for the patient as follows:

Breakfast.—Fruit, 125 gm. (one-half of a large orange). Cereal. 4 tablespoons (1 c.p.), with 1½ ounces of cream and 1 teaspoonful of sugar. One egg (1 p.p.) on 1 slice of toast (1 c.p.) with 1 pat (⅓ oz.) butter. Coffee, with ½ ounce cream and 1 teaspoonful sugar.

Lunch.—Scrambled egg, 80 gm., 1⅓ tablespoons (1 p.p.). Toast, 1 slice (1c.p.) with 1 pat butter. Cake, 60 gm., average piece (1 c.p.). Fruit, 125 gm.

Dinner.—Oysters, 4 average-sized (½ p.p.). Purée soup, 4 ounces (½ p.p.). Fish, 40 gm. (1 p.p.). Meat, 40 gm. (1 p.p.). Bread, 1 slice (1 c.p.), butter, 1 pat. Potato, 1 moderate-sized (½ c.p.). Boiled rice, 2 tablespoons (½ c.p.). Spinach (or other fodder vegetables). Pudding, 100 gm., 1 serving (1 c.p.). Coffee, demi-tasse, with 1 teaspoonful of sugar.

With such a diet planned, the patient is instructed that wherever a proteid portion or a cereal portion is indicated, any other equivalent portion from the list may be substituted. Moreover, if at one meal he does not care for the full allowance, any article omitted or its equivalent may be taken at another meal. The patient may, if he desires, take more fruit, butter, sugar, or other non-protein food than is ordered.

Such a menu gives a patient a diet that is sufficient in amount and nutritive value, is satisfactory in variety to most people, is easy to obtain at an ordinary home table or at a hotel, and can be varied by the patient to suit his taste: and yet with all the changes the patient is getting a well-balanced ration and his protein intake is strictly regulated.

I find that patients are able to understand these regulations without much difficulty, although the patient should be kept under rather close supervision until the ideas are thoroughly understood. Later the patient should make a report at stated intervals as to just what he has taken in twenty-four hours. In this way a case may be followed and controlled indefinitely.

Where accuracy is important the food should be actually weighed. It is a good plan to do this at the start in any important case. After weighing the different kinds of food for a time the portions can be estimated with sufficient accuracy by the eye. For the purpose of weighing food at the table I have found the food scales designed by Dr. Hart extremely satisfactory.[3]

RESULTS

What can be accomplished by such regulation of the diet?

Much will depend on the stage of advancement of the disease and on its activity. The treatment is prophylactic and palliative rather than curative. Naturally the best results are obtained in cases in which the functions of the kidneys are but little impaired, in the early or inactive stages of the disease. But surprisingly good results have been obtained in some cases of cardiorenal disease, so advanced that we should ordinarily despair of helping them.

When the protein metabolism can be adjusted relief from those symptoms which are due to failure to eliminate these waste products is obtained, and a condition of relative health is restored. The relief from nervous symptoms, anorexia, and the feeling of lassitude or fatigue has already been mentioned. Perhaps the most gratifying result, however, is the lowering of blood-pressure and the consequent relief of the burden thrown on the heart. It would appear that the increased blood-pressure in case of chronic nephritis is due, in part at least, to the excess of these waste products in the body. Such a reduction of blood-pressure cannot be secured in every case, but a gratifying reduction occurs in a large majority, and a surprising drop in many. Blood-pressures ranging from 200 to 180 mm. are commonly reduced below 160, not infrequently to 150 or 140.

One of my patients over 60 years old, starting with a blood-pressure of 190, finally reached and maintained for months a pressure ranging from 120 to 130. He enjoyed better health and strength than at any time since the symptoms arose two years before, but he died recently from an intercurrent disease, being unable to resist successfully an acute infection which resulted in pleurisy and pericarditis. I am confident that his life by regulation of the diet was prolonged fully two years longer than it would have been otherwise. I can see no reason why he should not have lived for an indefinite period longer but for this intercurrent affection.

Another patient was taken in charge a year and a half ago, after the second severe attack of uremic convulsions occurring within three months. He has been free from uremic attacks since then; he is in better health than for a number of years, and his blood-pressure for the past year has shown an average of 160, although it was 210 when treatment began.

In another case of advanced interstitial nephritis with failing cardiac compensation the blood-pressure was reduced from 260 to 180, although the patient had had symptoms for two years and marked symptoms for several months. In this case, however, the improvement lasted but two months, although during that time the patient was practically free from symptoms. Then the former symptoms recurred, with an increase of blood-pressure, so that in two months more it had again reached 260. The patient lived only about two months after that. Surely this was a very advanced case, yet great relief ensued for a time.

Such results cannot be secured in all cases, of course; nevertheless, they are exceptional rather in the degree of reduction of blood-pressure than in the fact that a satisfactory result was obtained. I have had a good result now in so many cases in which I hardly dared hope for it, that I am beginning to predict relief in almost every case. Contrast such results with the transient and unsatisfactory results of drug treatment, and I think you will agree that it is well worth while to take the moderate amount of trouble involved in the proper regulation of the diet.

The stumbling-block in the past has not been the absence of sufficient knowledge, for the scientific laboratory workers have known the underlying facts for years, but the difficulty of getting that knowledge into a form simple enough to enable the physician to apply it in every-day practice. This difficulty is overcome, at least in large measure, by the charts and tables here mentioned.

427 Beacon Street.

ABSTRACT OF DISCUSSION

DR. G. C. SMITH, Boston: I have been interested during the past fifteen years in dietetics in chronic diseases, and the best methods of dealing with chronic affections. There are so few remedies in the way of drugs that can be continued with benefit for a long time, that it is necessary to get at these troubles in some other way, and the dietetic way seems to be the one indicated. The first instruction in New England given on the subject of dietetics has been given by Dr. Arnold. It is really a misfortune that every institution teaching medicine in this country does not have a definite chair of dietetics. It seems to me that this is too large a subject for a man who is teaching another subject to give instruction on. For the past two or three years, however, there has been an improvement in the manner in which the young physician in New England handles the chronic cases, dietetically speaking. Our experience has been somewhat different from Dr. Arnold's in some respects. The question of calories which enters into any diet can be modified very much, as explained by Dr. Arnold in his tables. In other words, in the cases that are primarily renal, the patients as a rule are very thin, usually cold and anemic. In such patients, the carbohydrates and fats must predominate in the diet. On the other hand, in the cardiorenal cases we often find the reverse. In these cases frequently the cardiac part is primary and the interstitial changes or process in the liver, the kidneys and elsewhere are secondary and consequent upon the prolonged congestion of these organs. Such a prolonged congestion, with the long duration of the disease, produces changes in metabolism which weaken the patient, making him take much less nourishment because he suffers with indigestion. The nourishment too may be of the wrong kind, *e. g.:* One may cut out the proteid and increase the "pap," and especially the sweets and bread with their high percentage of starches. By doing this and adding cream and butter the calories are much increased. Such patients are unable to take much exercise because of the cardiorenal disease; therefore, they remain in the house and at rest. A reduction in the number of calories in such cases should be made by reducing the amount of fat and carbohydrates Then the question of the proteid element comes up There is no doubt in this class of cases but that the proteid element must be higher than seventy grams, one cannot produce an improvement in metabolism without more proteid, hence we must give it to furnish the best nutrition for the cells of the body Consequently in all these cardiorenal cases it will be found advisable to raise the amount of proteids higher than physicians as a rule recommend This may be considered a little off from the subject of the paper, but it is such a common thing to find the renal and cardiac cases mixed that it is well to consider them

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[3] Hart, T. S.: A New Food Scale, THE JOURNAL A. M. A., Aug. 7, 1909, p. 457

Dr Philip S Roy, Washington, D C · I have used Dr Arnold's charts regularly As to the question of fats and carbohydrates overloading the system and the metabolism becoming deranged as a consequence thereof, as mentioned by Dr Smith, I have not found that the case if Dr Arnold's plan be followed When one wishes to lessen the number of carbohydrate calories, he can replace these calories with fat Three pints of milk with a pint of cream and one ounce of butter equals about 2,000 calories This will give all the energy needed I am in accord with the statement that the proteids in disease of the kidney should not be above 50 grams daily

Dr H D Arnold, Boston I am glad that Dr. Smith mentioned the cardiorenal cases in which the cardiac end predominates The problem here is somewhat different, in that the power of the kidneys to eliminate nitrogenous material is less seriously impaired Greater liberality in the use of protein food may be allowed, yet even in these cases there is no necessity for large amounts I think that 50 grams of protein are enough for the purposes of tissue building, including the heart It is of great importance that there should be an abundant amount of nutrition—a sufficiently high caloric value to the diet—but beyond the amount of protein needed for tissue building, this nutriment is just as well, if not better, derived from the other foodstuffs Often, however, our plan must be modified because of questions of digestion and assimilation Some people cannot digest fats well, and others have difficulty with the carbohydrates I would not be understood as maintaining that we must always give the number of calories which are indicated by theoretical calculations Often we find a patient will maintain weight and strength, and may even gain, on 1 500 calories when 2,000 or more are demanded theoretically If such is the case it is a mistake to force the patient to take the larger amount

The only credit I feel that I am entitled to in this work is in getting our knowledge in dietetics into a simple, practical form for application in ordinary practice There is nothing in it that is new or that has not been utilized by the laboratory workers in metabolism experiments for years But the data have been too complicated for use in ordinary cases and have not been easily available If we can apply these principles to ordinary patients we shall plan diets with far more intelligence than we have done in the past

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Health and Sanitation in Cuba—Reporting the result of an inspection trip over the Island of Cuba (*Sanidad y Beneficencia*, April, 1910, p 305), Dr Manuel Varona Suarez Secretary of Health and Charities, says that there did not exist a single case of quarantinable disease with the exception of leprosy, and that his country was on a level with the healthiest communities in the world He also asserts that should such a disease enter the country the efficient sanitary organization of the island would be able to ward off the threatening danger He feels that the national health department is efficient but regrets that he cannot say as much for the sanitary service in the municipalities, for he found with a few exceptions that vaccination was neglected, that the public slaughter houses were in a shameful condition, and that the cemeteries were almost as much neglected Two great obstacles to efficient sanitation were lack of water supplies and sewerage systems His inspection convinced him of the urgent necessity of establishing dispensaries and sanatoriums at appropriate sites in the various provinces and of founding hospitals and special wards for the care of the large consumptive population which lacks resources to protect itself against the disease and which constitutes the chief factor in its propagation

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APPENDICITIS IN CHILDHOOD

WITH A REPORT OF 500 CASES *

H. C DEAVER, M D.
Professor of Surgery, Woman's Medical College of Pennsylvania;
Visiting Surgeon to Episcopal, St Agnes' and Stetson Hospitals, and Children's Hospital of the Mary J.
Drexel Home
PHILADELPHIA

This paper is based on an analysis of 500 cases in which I operated at the Children's Hospital of the Mary J Drexel Home, and on a review of the more recent literature.

Appendicitis in childhood, characterized as it is by subtle and insidious onset, rapid progress and obscurity of symptoms, is a disease of the most profound importance, and it well merits more attention and study than has hitherto been bestowed on it.

The earliest case of appendicitis was reported by Dixon,[1] and occurred in a baby, aged 24 days, which was premature at the eighth month. The appendix was gangrenous and formed, with part of the cecum and ileum, the contents of a sac of a strangulated inguinal hernia Since the appendix was adherent to the sac, Dixon held it responsible for the descent of the ileum and cecum A very similar case is reported by Lilienthal[2] Other cases of infantile appendicitis are reported by Bamberg,[3] in a child, aged 5 weeks; by Dennis and Goyens, in two infants, aged 6 weeks, and by Blumer and Shaw, in one, aged 7 weeks. Berkholz[4] reports four cases in infants, aged 12, 15, 17 and 19 months, respectively, while Schellong[5] met a case in an infant, aged 21 months Alsberg[6] gives as his youngest patient a baby, aged 6 months, while Springer[7] has seen none younger than 3 years. My youngest patient was 21 months old. Mayet (cited by Springer) collected reports of nine cases of appendicitis in infants. In 1,000 cases McCosh[8] found 1 7 per cent. in children up to 5 years of age. My statistics, however, place the frequency in the first five years at about 8 per cent. This frequency in the first five years of life will probably be diminished under more refined diagnoses Churchmann[9] thinks that infantile appendicitis deserves separate consideration from that occurring later in childhood, stating, with much truth, that the surgical problem of infantile appendicitis is that of diagnosis, and that the difficulty of diagnosis keeps up the mortality. So, also, von Bramann[10] asserts that the danger of appendicitis is greater in the first years of life than later, and gives a 50 per cent. mortality in all infants under 5 years of age that were present in a series of 117 cases in children In those from 6 to 10 years of age, inclusive, the frequency jumps from 8 per cent to 36 per cent., finally reaching 56 per cent. in those between the ages of 11 and 15 years.

As to sex, males predominate Riedel[11] found that of 1,532 patients 955 were males and 577 females. My series showed 315 males and 185 females.

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* Read in the Section on Surgery of the American Medical Association at the Sixty-first Annual Session, at St Louis, June, 1910

* For reasons of space, the table of cases is omitted It appears in the Transactions of the Section and in the author's reprints

[1] Dixon Ann Surg, *1908, xlvii,* 57

[2] Lilienthal, Howard The Journal A M A, Aug 29, 1908, p 754

[3] Bamberg Inaug Diss, Leipsic, 1905

[4] Berkholz Monatschr f Kinderh, lxxxviii, 133

[5] Schellong Med Klin, 1908, iv, 722

[6] Alsberg Arch f Kinderh, 1909, l, 252

[7] Springer Prag med Wchnschr, 1909 xxxiv, 89

[8] McCosh, A J Appendicitis in Children, The Journal A M A, Sept 24, 1909, p 853

[9] Churchmann Bull Johns Hopkins Hosp, 1909, xx, 31

[10] v Bramann Deutsch med Wchnschr 1909 xxxv, 1591.

[11] Riedel München med Wchnschr., 1907, liv, 2305

The microscopic pathology of acute appendicitis has been carefully studied by Alsberg,[6] who emphasizes the importance of fixing the appendix in 0.8 per cent. formaldehyd solution immediately after its severance from the cecum. The most important changes, of course, are in the mucosa, but the other coats act in sympathy, as the inflammation increases in intensity from the center toward the periphery. In the mucosa the epithelium is desquamated, often eroded and extensively destroyed, and hemorrhages are frequent. The solitary lymph-nodules are enlarged, thickened and studded with polymorphonuclear eosinophils. Alsberg warns against mistaking the exceptionally well-developed nodules of children beyond 2 years of age, especially when cut oblique, for inflammatory changes. The submucosa and sometimes the muscular coat is edematous and the blood and lymph-vessels distended and choked with leukocytes. The serosa is congested and often covered with white fibrin. Ulceration may extend through to the serosa, producing appendicitis granulosa of Riedel, which involves, by predilection, the hip.

In chronic appendicitis also the principal changes are found in the mucosa, in which the epithelium and mucous glands are destroyed and the lymph-nodules atrophied, while contractions may obliterate the entire length of the lumen, or only one part of it. Stenosis near the base of the appendix leads to the formation of hydrops or empyema, and, if near the tip, produces a globular swelling, which, however, causes little or no danger. Adhesions, more or less extensive, may be connected with other organs more remote from the ileocecal region than in adults, because of the greater length of the appendix in children, which compared to that of the large intestine, is, according to Ribbert, 1.1 in new-born children and 1.2 in adults. This circumstance accounts for many mistaken diagnoses, Schellong[5] reporting a case in which the appendix ran transversely behind the bladder to the left and set up a left-sided appendicitis. Riedel[11] states that strictures are relatively rare in children, because a long time is required for their formation. He places their frequency in adults at 26.5 per cent. and in children at 8.7 per cent. Fecal concretions, on the other hand, are relatively common, Springer[7] having found them in 59 per cent. of acute cases and in 20 per cent. of chronic. They are even more frequent than in adults, in the proportion, according to Riedel, of 39 per cent. in children and 27.7 per cent. in adults. The same author states that the worst attacks are associated with suppurating fecal concretions. It is interesting to observe that Low found meconium in the appendix of a 5-month fetus.

Often, the regional lymph-nodules are swollen, indurated and inflamed, and Comby[12] regards them as "witnesses of infectious processes of which appendicitis is the stage." Churchmann[9] states that the pathology of appendicitis in children is distinguished from that of adult life by the tendency to early perforation and the frequency of spreading peritonitis, and Sloan[13] observes that the undeveloped omentum affords less protection against rapidly spreading peritonitis.

The predisposing causes of appendicitis are said to be infectious disease, family disposition, dental caries and mechanical irritation. Of the infectious and contagious diseases, enteric fever, scarlatina, influenza, mumps, pertussis and chicken-pox, have been mentioned. Enteric fever and intestinal catarrh certainly produce congestion of the appendix, which, with superficial loss of epithelium, may prepare the way for infection of the deeper layers. As to scarlatina, Springer states that Ganghofer, in twenty years' experience with scarlet fever, did not observe acute appendicitis in a single instance. Epidemics of influenza often leave in their wake severe acute attacks of appendicitis; certainly, influenza readily affects lymphoid organs. Chicken-pox was more than likely the cause of appendicitis in Schellong's case. The etiologic status of nasopharyngeal troubles, tonsillitis, adenoids, cervical adenopathies and otitis media, is problematic, as the path by which the exciting cause of these conditions reaches the appendix is somewhat obscure, unless it is assumed to be hematogenous. Sloan[13] states that the period of greatest development and activity of the lymphoid tissues corresponds to the period of greatest incidence of appendicitis. Family disposition is emphasized by the French, and may be accounted for by the irregular mode of life among poor families, so that neglect, improper feeding and insufficient medical attention may bring about appendicitis as well in one child of a family as in another.

Jackson[14] presents eleven arguments why dental caries should cause appendicitis, the most striking of which are that infants suffer rarely and that the civilized have both dental caries and appendicitis, while the uncivilized have good teeth, and no appendicitis. Teeth, examined by Alsberg in nine children with appendicitis, were carious, and partly absent in six and normal in three. Mechanical irritation may be caused by errors of diet and foreign bodies. Errors of diet, though undoubtedly responsible for recurrences in adults, are probably only remotely connected with acute appendicitis. Springer has noticed no increase in the frequency of acute appendicitis when the fruit season is at its height. Fecal concretions and other foreign bodies may irritate the appendix enough to permit the entrance of bacteria through epithelial abrasions, but, on the contrary, they may lie dormant for a long time and, not rarely, throughout life. Alsberg found two bits of enamel in an acutely inflamed appendix. To intestinal worms, by their frequency in childhood, might be ascribed a causative rôle. In large numbers (as, for example, 80 oxyuris in an appendix extirpated by Hippius-Levinsohn, cited by Springer) they could block the lumen of the appendix, cause colic, and injure the mucosa superficially by trauma and by the elaboration of toxins. The exciting cause of appendicitis is, of course, bacterial, and usually *Bacillus coli communis,* which is ever alert to invade the walls of the appendix through a *locus minoris resistentiæ* offered by any of the predisposing causes. Other pyogenic organisms may act alone or in conjunction with *B. coli.*

The symptoms of acute appendicitis in infants are unquestionably scanty, irregular and misleading, and it undoubtedly follows that infantile appendicitis is more frequent than is generally believed, or than statistics show. Thus, at autopsy on a 2-weeks-old infant that died of severe acute enteritis, Deiss (cited by Soltmann) found acute appendicitis with serofibrinous peritonitis, without having produced any clinical symptoms, and concludes from this that such findings in infants, even when less severe, are frequent. So, too, Churchmann states that appendicitis of the severest type may exist without one of the classic symptoms, and that even a general peritonitis may develop under observation.

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12. Comby: Bull. méd., Paris, 1908, xxi, 535.
13. Sloan: Eclect. Med. Jour., Cincinnati, 1909, lxix, 372
14. Jackson: Australasian Med. Cong. Tr., 1909, i, 1359.

In older children, on the contrary, symptoms reach the other extreme, and acute attacks, even more regularly than in adults, occur suddenly and with very stormy symptoms. There are severe pains which localize about the navel, shortly followed by vomiting, rigidity, more or less extensive, and abdominal distention. The temperature is usually higher than in adults and the pulse more frequent. On the whole, these children give the impression of being seriously ill, lying on their backs with legs drawn up, or curled up on their side, writhing from pain. It must be remembered that the child may be mentally incapable of accurately locating the pain, often pointing to various parts of the abdomen as the place of greatest intensity. Voluntary rigidity is common in children, owing to fear. Hyperpyrexia is an attribute of childhood, and the rapid pulse is due in part to the hyperpyrexia, and in part to the restlessness of the child. Thus, it is evident that the reaction of the whole organism is more active in childhood than later.

In chronic appendicitis the whole organism may be affected by the presence of a chronic focus of infection. The troubles are chiefly digestive. The appetite is capricious and varies from day to day. The tongue is coated and the breath bad. Digestion is slow and dyspepsia marked by flatulence and epigastric swelling after meals. Constipation is habitual and obstinate. Such disturbance may interfere with nutrition even to the extent of emaciation. The face may be thin, pale and sallow, and there may be black circles about the eyes. On the other hand, sufferers from chronic appendicitis may have rosy cheeks and a generally healthy condition. There may be circulatory disturbances, as pallor and blushing of the face, cold hands and feet, and cardiac palpitation and dyspnea on exertion. Secondary anemia, with a murmur at the base of the heart may exist, and fainting may occur. Appendiceal neurasthenia may render children dull and silent and "friends of solitude and repose."

The diagnosis of appendicitis in infancy and childhood should be made easy by the epigram: "All cases of abdominal trouble in children are appendicitis until proved otherwise." With this proviso, there should follow a systematic examination of all organs. In infancy it is unquestionably difficult, yet usually capable of being established. In this solution it must be borne in mind that the younger the child, the more deeply the appendix lies in the pelvis, owing, according to Selter, to the deep position of the cecum in the pelvic fossa. Hence, it is conceivable that bladder symptoms may monopolize the attention of the examiner, there being cloudy urine from edema of the bladder, tenesmus, and even retention from direct irritation of the bladder wall. Many cases have been reported in which urinary symptoms predominated. Churchmann writes that all urinary symptoms in childhood suggest the possibility of appendicitis. For the same reason pelvic abscesses are common, and may simulate abscesses from other causes, so that the same author states that in infants with apparent hip-joint disease, particularly if the thigh be flexed, the same possibility should be kept in mind. It is obvious then that every possible means of reaching in and about the right iliac region must be employed. The simple procedure of catheterizing the bladder may go a long way toward clearing up a doubtful case, and evacuating the phantom pelvic abscess.

By far one of the most important procedures in children is rectal palpation, and this must never be neglected. Churchman states that palpable resistance on the right side by rectal examination is one of the most frequent findings, and Selter calls it absolutely constant. In Schellong's case, the symptoms were characteristic of rectal abscess, including fever, rectal tenesmus and frequent small slimy stools. Rectal examination revealed within half a finger's length an abscess which protruded from above and to the right toward the rectum. Doubtless this rectal palpation has been the sole element of correct diagnosis in numerous cases, including two of my own. Tenderness at McBurney's point, when present, is almost pathognomonic, but the wandering appendices of childhood may carry their tenderness elsewhere. Thus, tenderness may be greater on the left side than on the right, as when the appendix is in the pelvis. Other signs, more applicable to older children, are hyperesthesia of the skin, and the fact that sudden removal of the palpating finger-tips from the point of greatest tenderness is more painful than the finger-tips themselves. Carstens[15] recommends palpatory percussion. Flexion of the right thigh on the abdomen is likewise very suggestive. In chronic appendicitis the organ is more often palpable than in adults, and an analytic study of the symptoms, together with localization of the tenderness at or near McBurney's point, usually establishes the diagnosis.

An appreciation of the difficulties of differential diagnosis may be had only by scanning the various and varying cases reported in the literature. Affections of the thoracic, abdominal and pelvic viscera, as well as of near-by joints, may enviously mimic the peculiar little ways of the appendix. The old question of pneumonia or appendicitis must be cautiously considered, particularly right-sided central pneumonia with but few physical signs. At the onset of right-sided croupous or central pneumonia, pain is often referred to the abdomen, and incriminates the appendix. This abdominal hyperesthesia may disappear by firm manual pressure, and the abdominal walls relax between respirations, which are very rapid. There may be herpes and cyanosis of the lips. In puzzling cases, careful observation usually clears the diagnosis within twenty-four hours. Cholelithiasis is rare in childhood, yet Alsberg mentions a typical gall-stone attack in a 3-year-old child, with the passage of gall-stones. Julien[16] reports a case of perforative appendicitis with retrocecal abscess, which was diagnosed as hepatic colic. Pancreatitis, renal colic, and movable kidney are rare in childhood. Intestinal catarrh, especially when accompanied by colic, may seriously cloud the diagnosis because of pain, vomiting, increased abdominal tension, fever and rapid pulse.

Of the intestinal obstructions, intussusception may be distinguished by the tympanites, by paroxysmal pain, by the discharge of bloody mucus from the anus, and by the late appearance of inflammatory peritoneal reaction, although if seen for the first time in the stage of general peritonitis, differentiation from appendiceal peritonitis is impossible, and in such cases operation is the safest procedure. Intussusception is of importance because of its frequency in childhood. The dense, sausage-shaped tumor, which shifts and varies in size, even to the extent of being reached by rectal palpation, as the intussuscipiens advances, may be helpful in diagnosis. Springer was led to the erroneous diagnosis of perforative appendicitis with peritonitis in a case which autopsy showed to be volvulus, caused by a lymphangioma in the mesentery of the small intestine. This case suggests the possibility of a congenital mesenteric cyst, such as I recently[17] reported, likewise being confused with acute appendicitis. In one of my cases, a right ovarian cyst twisted on its pedicle, in a girl aged 12, simulated acute appendicitis. In girls, salpingitis and gonococcic peritonitis must be considered, and the presence of vaginal discharge or vulvovaginitis will be helpful, as well as rectal examination. Tuberculous peritonitis was mimicked by a case of appendicitis reported by Rubritius and Hermann (cited by Springer) from von Jaksch's clinic. Acute cystitis in small children, caused by the colon bacillus, gives rise to fever, pains about the navel and vomiting. Here urinalysis, which often must be made repeatedly, suggests the diagnosis. Chronic appendicitis, by causing adhesions to the bladder, may be confused with cystitis. Lumbar abscess, such as may accompany Pott's disease, was diagnosed by Julien[16] in Case 4 of his series, a girl aged 4 with appendiceal abscess, which was evacuated by lumbar incision. In right-sided hip-joint disease there is absence of inflammatory peritoneal reaction, presence of muscular contracture, and the demonstration of foci of diseased bone. Churchmann reports cases which simulated this as well as vesical calculus, intestinal obstruction, associated with roundworms, and even cerebrospinal meningitis. Diagnosis in cases treated medically must always be uncertain.

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[15] Carstens: Deutsch med Wchnschr, 1909 p 1592.
[16] Julien: Echo méd du Nord, 1907, xi, 859

The prognosis of acute appendicitis is favorable, if the case is received early, and if the appendix is removed early. If the patient is operated on within the first twenty-four hours, the mortality is practically nil. Beyond this time, in suppurating cases, the mortality rapidly rises and after the third or fourth day is nearly as unfavorable as it was favorable in the early stage. With the flight of time, thinner grows the hair that suspends the sword of Damocles. Moreover, the danger of acute appendicitis is greater in the first two years of life than later. In chronic appendicitis, while there is no immediate danger, yet an acute attack with perforative peritonitis is always to be feared. In fact, as Alsberg expresses it, "A person who has once recovered from an attack of appendicitis sits on a barrel of gunpowder."

As regards the value of the leukocyte count, I agree with Soltmann that the greater the leukocytosis, and the larger the relative percentage of polymorphonuclears, provided the temperature and the pulse are proportionate and not high, the more favorable the prognosis; while the lower the leukocytosis, with lower temperature and more frequent pulse, the more unfavorable and severe the course. He thinks that leukocytes here play a rôle similar to that which they play in the autolysis of the lungs in pneumonia, where a proteolytic ferment exerts a digestive action on the exudate.

The ideal treatment will maintain the mortality at nil. This ideal will be attained only when all patients are operated on early. That early operation is the normal course to pursue is now conceded by the world's surgeons. It is true that more early cases are received than formerly. That is why the mortality is decreasing as the years roll on. But the desideratum is that all patients be received early. I believe that the fault is not so much with the medical profession as with the ignorance and prejudice of parents. How many patients do we receive, sick from three to seven days, with pus-laden abdomens, and the parents beseeching us to operate!

The time to operate, then, is before the storm breaks, and while the noon-day quiet holds the hill. Twenty-eight of the appendices in my series were ballooned with pus, and on the point of exploding, when removed. Such an organ, like Vesuvius, threatens the entire peritoneal cavity. A unique feature of appendicitis, up to and during this stage, is that the entire area of acute inflammation and phlegmon can be removed with nothing but benefit to the patient. Where else in the body is such a thing possible? Can a digit, the seat of a felon, be amputated with propriety? Can a pyosalpinx be removed with the same disregard for the value of the organ? Can even a surface phlegmon, as a carbuncle, be removed *in toto* in a similarly satisfactory manner? Inconceivable! Here, then, is an organ which, together with the disease that has attacked it, can be ablated without depriving the patient of an organ or tissue of any recognized value.

In cases in which there is a localizing abscess, with diffuse peritonitis, general abdominal tenderness, with more or less distention and bilateral rigidity, moderately high temperature and rapid pulse, with a low leukocyte count and a large percentage of polymorphonuclears, it is best to defer operation. With the ebbing of the tide, there is often revealed a mass stranded on the pelvic shelf, an indication that the omentum and coils of intestine have had time to assemble and form a barrier to the pus. With the evacuation of the abscess, recovery is practically assured. In twenty of my cases I waited from two to twelve days before operating.

Such cases are managed very much the same as cases of acute pyosalpinx. Rest in bed, ice-packs to the abdomen, the Fowler position, gastric lavage, rectal instillations of saline solution and no water, no nourishment by mouth, no purgatives, no opium.

Opium clouds the symptoms and makes the diagnosis more difficult. By favoring tympanites, it interferes with palpation and percussion, and, by diminishing or removing pain, it makes severe cases assume a more benign aspect. It also retards the defensive activities of the leukocytes. Purgatives must be withheld absolutely. This statement cannot be made too strong. The majority of badly progressing cases of appendicitis have been treated with purgatives and the most unfavorable turn often dates directly from the time of their administration. Cases have been reported in which purgatives have produced perforation. As one writer expresses it, "First purgatives, then death." Cathartics must never be given unless it is absolutely certain that appendicitis is absent. By increasing peristalsis, they interfere with the localizing process, and in the presence of perforation, increase fecal extravasation. If spontaneous defecation does not occur after the most acute symptoms have subsided, it may be assisted by small, lightly injected enemas of soap suds or oil, or by suppositories.

I wish it clearly understood that I employ non-operative treatment only in cases with localizing abscess with diffuse peritonitis. To treat early intra-appendiceal appendicitis medically is a hazardous venture; as well might one tie a halter about the little patient's neck. It is like the game of heads I win, tails you lose. Medical treatment should have no more place in the treatment of these early cases than it has in hare-lip or cleft palate. Its mortality is twice that of the operative, and in cases of recovery it is difficult to convince the parents of the necessity of interval operation. Furthermore, when recurrence does occur, surgical help may not be at hand.

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[17] Deaver, H. C.: Ann. Surg., 1909, xlix, 619.

Operation is even more suitable for children than for adults, since their kidneys and cardiovascular system have not suffered through alcohol or age, and hypostatic pneumonia seldom occurs. In suppurative cases the appendix may be removed when it lies free or presents conspicuously in the wall of the abscess. On the other hand, when the abscess is large and the appendix not directly visible, and when its removal necessitates extensive disseverance of adhesions, it should not be disturbed, because of the probably already weakened and exhausted condition of the child, and the chance of diffusing pus over the abdomen. Thus, in twenty-six of my cases, the appendix was not searched for, but was removed subsequently. When pus is already diffused throughout the abdominal cavity, flushing the peritoneum is decidedly contra-indicated. Accessible pus, however, may be mopped away and copious drainage provided through the original incision and through counter incisions. In "clean" cases, I employ a small gridiron incision, since it reduces the chances of a post-operative hernia to a minimum. The stump of the appendix must be carefully disposed of by tucking under, and cecoplication must be so performed that there will be no liability of the sutures yielding, thus permitting reinfection of the peritoneum by the stump. As a routine measure a glass tube should be passed into the pelvic basin to explore for fluid, lest a pelvic collection be overlooked, and this precaution may be rendered doubly effective by rectal examination previous to operation.

The post-operative treatment of appendicitis is highly important. This begins immediately on the patient's removal from the operating table. If drainage has been required, the patient should be propped upright in bed, in the Fowler position. I do not maintain this position for more than thirty-six hours, for fear the intestines, already crowded into the pelvis by gravity, adhere to each other and cause intestinal obstruction. Enteroclysis, I am sure, is most beneficial for pus cases.

Nausea, spitting up, and vomiting after operation, usually yield to the stomach-tube. If these are persistent, however, and if there is a sudden severe pain becoming paroxysmal, intestinal obstruction has developed, as these are the initial symptoms.

The classic symptoms of intestinal obstruction, projectile vomiting, great distention, and retention of feces and gas, must not be permitted to appear, since they bring forlorn hope to the operating-table. These are not the symptoms of intestinal obstruction, but are those of a toxic peritonitis, the result of intestinal obstruction. I found the temperature and pulse to be of but little significance in these cases. When operating, if no definite constricting band is found, and the adhesions are numerous, the best procedure is to establish lateral anastomosis to circumvent the obstructed area. Accordingly, I established ileocolostomy in one of my cases of intestinal obstruction. In two other cases the same procedure was indicated at the primary operation for prophylaxis of the partial obstruction, which was present, becoming complete. In the one, two knuckles of ileum had adhered so as to produce partial obstruction by agglutination, and ileocolostomy was necessary. In the other, enterorrhaphy to close a perforation of the ileum so narrowed the intestine that ileocolostomy was likewise performed. I have prepared a table showing sixteen cases of intestinal obstruction operated on with one death, that of a boy, admitted on the fourth day of his illness, who had developed a frightful peritonitis and, after a plucky fight of eighty-five days, in the course of which he developed bronchopneumonia and subphrenic abscess and endured three operations, finally succumbed to that octopus of surgery, universal abdominal adhesions.

Secondary abscess occurred in twelve of my cases, and was subphrenic in six. Cases showing diffuse peritonitis at operation must be watched carefully throughout the first month of the post-operative period for evidence of this complication. Protracted elevation of temperature, together with high leukocyte count and local signs, usually indicate secondary abscess. Subphrenic abscess fixes the diaphragm, produces rigidity of the overlying muscles, pushes the liver down, causes diaphragmatic pleurisy, and makes the patient profoundly septic. In the series of intestinal obstruction, two secondary abscesses were found, one beneath the diaphragm and the other at the duodeno-jejunal flexure.

The amount of urine must be watched daily after operation, and the stools examined for blood and intestinal parasites. The heart and lungs should be examined daily, and the skin closely watched for prompt diagnosis of the eruptive fevers and the throat for diphtheria. Six of my patients developed contagious diseases during their convalescence.

As regards drainage, I employ it only when the exudate is purulent or in large quantity. I use gauze, with or without a glass or rubber drainage-tube. The objection to drainage, especially with tubes, is that it may cause inflammatory exudate predisposing to intestinal obstruction. Glass tubes are more suitable for the pelvis, but their rigidity is a drawback. One of my patients broke a glass tube in his pelvis. In three others the tube was found, when dressing, to be blocked by a plug of omentum. The glass tube is usually removed within three days, when the exudate becomes clear and small in amount. It is replaced by a rubber tube, which is removed within a week. Rubber tubes are also useful in draining pockets of pus through counter-incisions, and, in conjunction with gauze, for large collections. Gauze drains well for a few hours, but, after that, it is only protective in function and hinders, rather than favors, drainage. Over the drainage I place gauze dressings, wrung out in sterile salt solution, since thus they absorb discharges more readily than a dry dressing.

CONCLUSIONS

1. Appendicitis in childhood occurs with increasing frequency from birth to puberty, and is more common in males.

2. It runs a rapid and severe course in children more often than in adults. There is less tendency to the formation of strictures, but fecal concretions are more often found.

3. Enteric fever, intestinal catarrh and influenza may predispose to appendicitis. Other infectious or contagious diseases and nasopharyngeal troubles are hardly to be considered as etiologic factors.

4. In infants the symptoms of acute appendicitis are often scanty, irregular and misleading. Infantile appendicitis is more frequent than is generally believed, or than statistics. In older children even more regularly than in adults, acute attacks occur suddenly and stormily. Chronic appendicitis represents a focus of chronic autotoxemia, with all its attending evils.

5. All cases of abdominal trouble in children should be regarded as appendicitis until proved otherwise. Differential diagnosis must be made between appendicitis and intestinal catarrh or worms, right-sided pneumonia or sacro-iliac disease, ovarian cyst twisted on its pedicle, mesenteric cysts, cystitis and rectal abscess.

6. The prognosis in acute appendicitis is favorable, if the case is received early and if the appendix is removed early. If the patient is operated on within the first twenty-four hours, the mortality is practically nil. After this time, the prognosis rapidly becomes worse. In chronic appendicitis an acute attack with perforative appendicitis is always to be feared.

7. The result of this ideal in treatment is to maintain the mortality at nil. Early operation is the normal course to pursue.

8. In intra-appendiceal appendicitis the appendix with the entire diseased tissue can be removed with nothing but benefit to the patient.

9. Non-operative treatment is indicated in cases of localizing abscess with diffuse peritonitis. Opium and purgatives are absolutely contra-indicated. Cathartics must never be given unless it is absolutely certain that appendicitis is absent.

10. Operation is even more suitable for children than for adults.

11. Post-operative treatment is highly important. The Fowler position must not be maintained for more than thirty-six hours in drainage cases, lest intestinal obstruction develop.

12. Intestinal obstruction is ushered in by sudden, severe pain, becoming paroxysmal, and by nausea, spitting up and vomiting. Later symptoms arise in consequence of toxic peritonitis, the result of intestinal obstruction. The temperature and pulse are of but little significance in these cases. In the presence of numerous adhesions ileocolostomy is the best procedure.

13. Secondary abscess must be carefully watched for. It is revealed by a rise and continued elevation of temperature, with high leukocyte count and local signs.

14. Contagious diseases must be recognized at once.

15. Drainage is to be employed only when the exudate is purulent or in large quantity. By its presence, it produces adhesions and predisposes to intestinal obstruction. Glass tubes may be broken or plugged by omentum. Rubber tubes are valuable for their pliability. Gauze drains well at first, but later retards drainage. A wet dressing is the best for absorption.

STATISTICS

Number of cases	500
Number of deaths	23
Mortality (per cent.)	4.6

SEX

Males	315
Females	185

AGE

Birth to five years	40
Six to ten years	180
Eleven to fifteen years	280

VARIETY

Acute appendicitis	403
Chronic appendicitis	97

CONDITION OF APPENDIX

Abscess at tip	27
Ulcerated, but not perforated	18
About to perforate	28
Perforated	17
Gangrenous	52
Perforated and gangrenous	91
Kinked or curled	32
Rotated on axis	5
Fecal concretion in appendix	19
Fecal concretion in abscess	7
Oxyuris in appendix	1
Slough of tip	1
Chronic	97
Acute catarrhal	105

CONDITION OF PERITONEUM

Local peritonitis with abscess	243
General peritonitis	12
Diffuse peritonitis	43

LOCATION OF ABSCESS

About appendix	123
Pelvis	65
Liver to pelvis	11
Subhepatic	3
Near navel	1
Near spleen	1
Multiple	39

MISCELLANEOUS PATHOLOGIC CONDITIONS

Gangrene of liver (partial)	1
Gangrene of spleen (one-half)	1
Gangrene of omentum (partial)	1
Gangrene of cecum (single)	3
Gangrene of cecum (multiple)	4
Gangrene of ileum (partial)	1
Ulcer of cecum (subserous)	1
Ecchymosis of cecum (subserous)	1
Cecum adherent to parietes	3
Perforation of ileum	2
Perforation of cecum	3
Uterus didelphys	1
Uterus, retroversion of	1
Ovarian cyst, twisted on pedicle	1

DRAINAGE

Gauze	113
Tube, glass	52
Tube, rubber	24
Gauze and glass tube	91
Gauze and rubber tube	18
Counter-openings	19

COMPLICATIONS

Bronchitis	1
Pneumonia	12
Abscess, secondary	12
Abscess, subphrenic	6
Intestinal obstruction	16
Phlebitis	2
Parotitis	1
Nephritis	1
Uremia	2
Endocarditis, acute	1
Diphtheria	2
Scarlatina	1
Measles	1
Pertussis	1
Enteric fever	1
Erysipelas	1
Melena	2
Hemorrhage, secondary	1
Evisceration from crying	2
Ulcer, decubitus	1

CAUSE OF DEATH

General peritonitis	12
Pneumonia	2
Uremia	2
Abscess, subphrenic	2
Abscess, perisplenic	1
Hemorrhage, secondary	1
Gangrene of spleen	1
Gangrene of ileum	1
Intestinal obstruction	1

1534 North Fifteenth Street.

ABSTRACT OF DISCUSSION

DR. L. S. MCMURTRY, Louisville, Ky.: The subject of appendicitis has received such frequent and elaborate consideration in this section from year to year that it is difficult to present any phase of the subject which has not hitherto been discussed. The paper just read, however, brings forward an important and common incidence of this disease which has not had adequate attention. This disease is often overlooked in children, or the diagnosis made too late to obtain the best results from treatment. There are two conditions which render diagnosis exceptionally difficult: First, those anatomic variations found in childhood relating to the position and relations of the caput coli and appendix, developmental in character, detract from the classic local symptoms and are in consequence misleading. Second, in early childhood the patient is unable to lend the coöperation as to subjective symptoms afforded by adults, which is so valuable as a diagnostic aid. And again, the diagnosis is more difficult because in young children palpation is impracticable, especially deep palpation. Gentle rectal examination is a valuable aid to diagnosis, and will often disclose the nature of the disease.

The essayist has properly emphasized the importance of quick work in the operative procedure. The dangers of prolonged anesthesia and extensive manipulation are increased in operations in children, and hence the greatest expedition should be observed. In a large proportion of suppurative cases the appendix should not be searched for, the surgeon contenting himself with evacuation and drainage for the immediate good result. In a word, Dr. Deaver has advocated the same principles in children that should be applied to adult life, after diagnosis has been established. In my experience intestinal obstruction is more common after operation in children than in adults, and the early recognition of this sequel will do much to prevent a fatal result. The rule in diagnosis set forth by Dr. Deaver is an admirable one, and should be generally adopted, viz., that diagnosis of appendicitis should be assumed in cases of severe abdominal pain accompanied by fever, and, unless proved otherwise, should be treated as appendicitis. And finally, in acute inflammatory disease of the abdomen in children opium should not be given in the early stage of the disease. The use of opium and drastic cathartics is harmful and should be withheld.

Dr. Edgar A. Vander Veer, Albany, N. Y.: In my experience, based on a study of the cases occurring in the practice of my father and myself, I find that the disease is most general between the ages of ten and twenty. Before the age of ten years the cases are comparatively infrequent and not so easily diagnosed by the attending physician, because of the inability of the child to make known the exact location of the pain. The approach to and the commencement of puberty also seems to have a bearing on the subject, and may to some extent account for the increased number of cases recognized after the age of ten years. Our youngest case occurred in a boy, three and one-half years old, who was ill only six hours, but from whom a gangrenous appendix was removed. He complained of pain in the stomach, but the diagnosis was made chiefly on the rigidity of the right rectus muscle.

As the author says, a child often comes to the surgeon with a history of having had bilious attacks, and when such a history is given it is wise to entertain the possibility that there have been attacks of appendicitis. In fact, I have operated in several cases in which the only symptom complained of was an indefinite pain in the abdomen, accompanied by a history of the patient having had several bilious attacks, and invariably have found a diseased appendix to be the cause of the trouble. Differential diagnosis between appendicitis and the other conditions mentioned is not very easy, though very important, and can only be determined by a careful weighing of the symptoms.

When we obtain a history of a child having suffered for years from bilious attacks, taken suddenly with vomiting and an acute pain in the abdomen, no matter whether in the right inguinal region or not, but gradually converging to that point, with an increased leukocytosis and with rigidity of the right rectus muscle, without excluding any of the other conditions, we are safe in making a diagnosis of appendicitis.

As to the laboratory as an aid in diagnosis and prognosis, I have not found it of very much value as the decision must be made by the surgeon on the symptoms presenting at the time he sees the case, not delaying for an elaborate report from the laboratory, which delay might prove fatal in many instances. Of course, the most favorable time for operation is *in the first twenty-four hours* when the prognosis is very good indeed, but it is seldom that we see a case under such favorable conditions, it usually runs along anywhere from three to four days to a week. In all these cases I believe in immediate operation no matter whether the appendix has not as yet ruptured, whether the abscess has formed, or whether there is diffuse peritonitis present. Often in cases in which the patients are in desperate condition I have seen them recover after operation and in my opinion the prognosis lies not so much in the operation as in the postoperative treatment.

The average practitioner within the past five years has come to recognize the symptoms of appendicitis much earlier than formerly, the result being that cases come to operation much sooner and the danger of resulting complications is greatly lessened, so that the abscess cases and cases of general peritonitis, with their consequent complications, are also greatly lessened in number.

Children, as a rule, react quickly after operation and seem to have more resisting power against infection, etc., than people of middle age.

When we come to look over the entire situation, appendicitis, barring the difficulty of making diagnosis, is no different in children from what it is in adults.

Dr. M. M. Lucid, Cortland, N. Y.: Why can we not treat appendicitis as we generally treat other things, strictly on a basis of facts? In other words, why not believe what we see, and strive to be prepared to read the handwriting on the wall—on the inside of the abdominal wall—from external manifestations, and not be misled by irrelevant symptoms? It has been my experience as well as that of several surgeons to operate on patients with acute, progressive appendicitis who were ill in bed with other unassociated ailments.

Much as we have learned about appendicitis, we have yet to learn that we ought to treat it *precisely* as we treat cancer, that is, as a local disease. To wait for the development of constitutional symptoms, such as elevation of temperature increased frequency of pulse, *with high tension*—the development of tympanites, etc., is to trifle with death in defiance of the plainest teaching of experienced surgeons. Our ablest surgeons, whose experience covers many thousand cases, tell us that the actual pathology of the appendix is not reflected by the symptoms of the patient. Why then should the general practitioner presume on a limited degree of good fortune often mistaken for skill, decide offhand what cases are operable and what inoperable without recourse to a surgical consultation? Meanwhile let it be admitted that good medical treatment is far preferable to poor surgical treatment.

Appendicitis may occur in any section of the country, at any time, and in any individual. There is but one treatment for a progressive case of appendicitis namely, *operation, not* when fulminating peritonitis has developed, but long before the deadly infection has passed beyond control.

Some laymen and many physicians "dread operations" having in mind operations performed too late and under conditions which they do their best to perpetuate. They *do not* recommend operation except as a last resort life or death—unfortunately, such patients usually have both operation and death. We are deeply indebted to Morris, Fowler, Ochsner, Murphy, the Mayos, and a score of others, for their thoroughgoing studies of the treatment of peritonitis. Surgical prophylaxis is the watchword for the early treatment of suppurative peritonitis—just as one fire-proof building is worth a dozen fire engines. It is fair to assume that within a few years, the man who trifles with a case of progressive appendicitis will be classed with the one who applies a greasy nostrum to a mammary cancer.

Dr. Maurice Rosenthal, Fort Wayne, Ind.: As has been brought out by the paper, as well as in the discussion, the lack of drainage and the formation of adhesions with consequent intestinal obstruction have contributed to the immediate mortality in these cases. I attribute nearly all my mortality in appendicitis to obstruction and lack of drainage. You can *prevent bowel adhesions*, at least for some time, by the liberal application of petrolatum. Like paraffin, petrolatum is absorbed very slowly, possibly not at all. By *applying it in the area to be drained*, I have found that drainage is more prolonged and more profuse, and that the dangers of adhesions and obstructions can be greatly reduced thereby. I have used petrolatum by manual application to a limited area, in a few cases—the last four cases, I think, in which I operated. I got better drainage, more efficient drainage, and more prolonged drainage, and probably averted some of the dangers of adhesions from obstruction.

Dr. Herman Tuholske, St. Louis: There are without question certain principles thoroughly understood and known which govern the management of appendicitis in children. No one has done so much in this direction as Dr. Ochsner. We have learned considerable about the proper treatment of appendicitis *from him*. There are some things that are very clear today. Some twenty-odd years ago, when I had a very limited experience in operating for appendicitis, I said: "Make the diagnosis and then operate." I have several times since then changed my opinion, but have always *come back to the orig-*

inal idea. The point of greatest importance is that a diagnosis of appendicitis should not be based on any one symptom. There is no such thing as a pathognomonic symptom of appendicitis. Pain in the region of the appendix may mean something else. Not long ago a physician made a diagnosis of appendicitis for a man who was traveling in the East and urged immediate operation. The patient returned to St. Louis at once, suffering great pain at the classical point. He asked me to operate for appendicitis. I had him go to bed in the hospital. When I saw him in the morning, there was as beautiful a streak of herpes zoster as I have ever seen, occupying the line of pain. Recovery was prompt.

As to treatment, I believe in operation as soon as the diagnosis is made, unless there is a positive contraindication. In making a diagnosis we must be on our guard, because in the early hours in young children there may be something else brewing. I have seen three cases recently, in which I was called by competent internists to operate, and which occurred in children of five and six years, who within a day developed pneumonia. One of them was rolling around in bed moving his limbs freely. I examined the child and elicited no pain in the abdomen. I asked for ten hour's delay, and at the end of that time the doctor told me the child had an unmistakable attack of pneumonia. First, make a careful diagnosis and then act, but never harbor the idea that appendicitis patients do not die; nor should you operate on the strength of one symptom or a combination of indistinct symptoms.

When you are sure of your diagnosis and the patient is still in fair condition, operate at once. If you wait until pus is forming, then you must follow some other plan of treatment and use your best judgment in selecting the proper time for operation later in the interval. An appendix which has been inflamed must be removed some time.

Dr. John B. Deaver, Philadelphia: We have heard a great deal about race suicide within the last few years from one of our most distinguished citizens, but there is no one thing that contributes so largely to a decreasing population as does sterility, the result of pelvic appendicular peritonitis in young girls and young women.

PERSISTENT PATENCY OF THE DUCTUS ARTERIOSUS

DEGENERATION OF THE CARDIAC MUSCLE AND CORONARY ARTERIES, AND OF THE SINO-AURICULAR BUNDLE, FOLLOWED BY RUPTURE OF THE RIGHT VENTRICLE*

KATE CAMPBELL MEAD, M.D.
MIDDLETOWN, CONN.

One of the most interesting problems of physiologists to-day is concerned with the structure and action of the heart. So much experimental work has been done during the past few years on the cardiac muscle, nerves, valves, and blood supply, as well as on the arterial system, by means of measuring apparatus and surgical operations, that any extraordinary case of heart failure which can be studied during life and post-mortem should be made available for future reference, as an addition to our sum-total of knowledge of congenital anomalies, as well as of inflammatory disease.

It is for this reason that I have ventured to make a slight contribution to the literature on congenital cardiac malformation, which in this case was associated with a sequence of disorders of the heart and its valves, resulting in a rare condition of rupture of the right ventricle, and in the patient's death at the age of 26.

In presenting this report I must express my regret that no sphygmographic tracings or electrocardiograms were made from the heart, the arteries, or the veins; but a brief study of the conditions as a whole may not be unprofitable, although a full discussion of such a case would far exceed the limits of this paper.

REPORT OF CASE

History—The patient was a married woman. Of her early history there is little known; she told me she had always had rheumatism and backache, had suffered frequently from grip, and that her physicians in Berlin, Germany, said she had heart trouble since she was a little girl. Her parents and grandparents were healthy. I first saw her April 3, 1905, and her condition was as follows: Height, about 5 feet, 4 inches; weight, 120 pounds; body, plump; color, good; some acne on face; catarrh of throat and nose; lateral and anterio-posterior curvatures of the spine due to muscular weakness, simulating both scoliosis and kyphosis; aortic pulsation in the abdomen noticeable; heart enlarged 1 cm. to right and left, with a murmuring, noisy systolic murmur heard both at base and apex, extending to right of the sternum and almost to the axilla; lungs normal; bowels distended with gas; diarrheal movements; stomach larger than normal; liver normal; left kidney in left groin; pelvic organs normal; urine normal.

After a summer of rest and hygienic life the cardiac murmurs nearly disappeared, but the patient continued to suffer from backache, diarrhea, and catarrh of the throat. The following year she went through a successful pregnancy in better health than usual, even omitting colds and grip. During the summer of 1907 she had a nervous strain which was followed in the early autumn by a condition of flabby muscles and flabby heart, with loud systolic murmur over the pulmonary artery in the third space, and a strong thrill felt over the third and fourth interspaces at the right of the sternum, and frequent palpitations. Her intestinal indigestion was very troublesome, and the facial acne most annoying. Hygienic treatment, baths, massage, careful diet, and occasional doses of codein gave considerable relief, while digitalis, even in minute doses, caused most uncomfortable bounding and beating of the arteries all over the body.

At the end of December, 1907, I referred the patient to Dr. Thayer of Baltimore, who sent me the following diagnosis:

"There is evidently a congenital malformation, but one which from her history and condition, may well be compatible with a long life. The long machinery murmur over the right ventricle with systolic accentuation, together with the accentuation of the second pulmonic sound, and the rather large right side suggest a septum defect (ventricular). This lesion is also more compatible with long life than most other cardiac defects. A striking feature of this case is the fact that the murmur is so loud at the base and in the first left interspace, and that the accentuation high up is late, a late systolic, almost a diastolic accentuation, but the murmur still continues throughout both cycles of the heart with the heart sounds heard, as it were, superimposed. The loudness of the murmur high up and the change in its accentuation would suggest to me an open ductus arteriosus."[1]

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] *I have taken the following notes from Dr. Thayer's memoranda:* "Weight, 121½. Color is good. General nourishment good. Pulse, 21 to the quarter at the beginning of examination, regular. Radial, not palpable. Pressure, by estimate, 120-25; measurement, maximum, about 115; minimum not easy to estimate. Thorax, symmetrical. Costal angle about 90. Movements, equal. Resonance and respiration clear in front. Back perfectly clear. Heart, P. M. I. in the fifth space, approximately normal position, 8.6 cm. from the median line, begins above in the second space and extends about 5.5 cm. to the right of the median line in the fourth space. No thrill in the precordial region, although the impulse is rather well felt in the second and third left spaces. Sounds, at the apex, first clear excepting for a soft systolic gradually fading away. Second, clear, followed by a very soft diastolic. As one reaches the fourth space a characteristic long machinery sound with systolic accentuation lasting through the whole cycle is audible. This is loudest in the third space, well heard in the second, also over the right side and out over the left chest. In the first left space under the clavicle the murmur was also very long and well heard with late systolic or, perhaps, even diastolic accentuation. The second pulmonic is loud and sharp. The second aortic is also of fairly good intensity. Right kidney descends below the costal margin. Liver is just felt descending below the costal margin on deep inspiration; no enlargement. From the character and position of the murmur one is justified in assuming a septum defect, and from the murmur which is heard up under the clavicle in so high a position, an open ductus Botalli."

During 1908 the patient was fairly well so long as she lived a quiet life and refrained from lifting heavy objects, which gave her pain in the abdomen and slight palpitation of the heart. In November she suffered from another attack of influenza, with tonsillitis, slight bronchitis, and a little pleurisy at the base of the left lung. The mild fever left her very much exhausted, with a hoarse voice and irritating cough, due apparently to a large lingual tonsil and relaxed uvula, but with no new cardiac symptoms, either objective or subjective She continued hoarse, and although the cough was gone by the end of February, 1909, her heart began to be more dilated and to have the murmurs and irregularity first heard in 1906. After a visit to Lakewood, in April, however, she gained several pounds in weight and felt better, although there was now in addition to the hoarseness a peculiar thin voice.

On April 22, 1909, I referred the patient to Dr. E Terry Smith of Hartford, who reported a paralysis of the left vocal cord, caused probably by pressure from the heart on the abductor fibers of the left recurrent laryngeal nerve

A report by Dr. Goodale of Boston, a week later, confirming Dr Smith's diagnosis, was as follows:

"April 30, 1909 Left vocal cord fixed in median line, immovable on phonation and respiration. Left arytenoid moves inward slightly on phonation. There is no evidence of thickening or irregularity in or about the arytenoids.

'The preservation of motion in the left arytenoid on phonation is due to the contraction of the interarytenoid muscle, indicating preservation of function in the superior laryngeal nerve This movement, together with the absence of irregularity or thickening in the left arytenoid joint, renders it probable that there is no ankylosis in the joint itself. It is, of course, possible that Mrs X.'s abductor paralysis arises from grip or laryngitis, but this is, to my mind, less probable than that it arises from pressure along the course of the nerve, for the reason that general infections do not, as a rule, affect the abductor fibers alone of one cord."

The patient was then sent to Dr Percy Brown of Boston, who made a Roentgen diagnosis of her heart as follows:

"The base of the heart, examined from both behind and in front, presents an undue and abnormal bulging on its left side, which markedly changes the shadow usually recognized as the normal in form and size This appearance is in close juxtaposition with the descending arch of the aorta, and may to a certain extent involve that structure The dilatation is general, however, rather than a sharply localized expansion, which would tend to rule out the likelihood of aneurism as being the etiologic factor I am rather of the opinion that it is due to a hypertrophied and dilated left auricle, secondary to an insufficient mitral valve This dilatation is the only apparent cause of the mechanical inference with the function of the recurrent laryngeal branch"

For one month, while the patient was living quietly and taking simple vocal lessons, the heart symptoms again improved and the voice became nearly normal, but on June 1 she complained, when walking, of severe paroxysmal pains in the abdomen and legs, especially in climbing stairs or going up hill. The heart was not then larger than usual and the murmurs were faint, pulse 80, systolic blood-pressure was 118, and hemoglobin normal urine normal On June 5 the apical mitral murmur of 1906 returned, and the left area of dulness extended 3 cm to the left of the nipple; pulse 100 On June 11 the pulse was 70 and regular, but a hard, suffocating pain was centered in the stomach and abdomen, at times accompanied, when walking was attempted, by severe pressure below the diaphragm This persisted for one week, when some edema was noticed in the face and abdomen; the patient passed 500 c c. of urine in eighteen hours full of urates, but containing no albumin, the specific gravity being 1040; her radial blood-pressure was 140 Digitalis being contraindicated, warm Nauheim baths were given, plus strophanthus and diuretin: the urine increased to 900 c.c. for a few days and the abdominal girth was reduced 6 cm.; at the same time the heart sounded stronger, and the edema left the face. Then, however, the stomach became irritable, the heart began to be very irregular with loud aortic murmur, and all baths and heart tonics were replaced by calomel, Epsom salt, and codein. On July 5, the voice again showed signs of the former paralysis, and a laryngeal cough was almost constant; the pulse was 105, pressure 130; the legs were very much swollen; the stomach and bowels were full of gas and the urine scanty. On July 9 she could not rest for a moment, owing to the laryngeal cough and cardiac discomfort; at 5 a. m of the 10th she broke into a profuse cold perspiration; at 7 a. m. she seemed faint and lapsed into a short stupor, after which until death no pulse could be detected at the wrist, even though hypodermic stimulants were freely injected, the carotid pulse was 104, very irregular, and the patient had difficulty in breathing, was restless and thirsty all day, dozing at brief intervals; she took a little nourishment and passed about 7 ounces of thick urine. At 10 p. m. she had another period of fainting with profuse perspiration and gasping, after which she could with difficulty be aroused, her speech was somewhat incoherent and thick, and she was still very restless. At 12.55 a. m., after swallowing a few drops of liquid, she suddenly threw up her arms, opened her eyes widely, gasped once or twice, and died.

So much for the patient's symptoms while under my care. Her earlier medical history is very meager. She was born in Berlin, Germany, a perfectly normal birth and a typically healthy baby, it was thought, but the physicians of her childhood are dead. A letter from Dr. Max Ph. Meyer, Geh.-Sanitatsrath, gave the following information: There was a systolic murmur over the mitral valve, which was louder during the fever of measles in 1895. In 1899, after a period of fatigue, the aortic valves were not found to be free from chronic inflammation, the tones not being quite clear. A note from Dr. Geheimrath Wolf says "After two examinations, I found a good compensation in the heart (*ein gut compensierter Herzfehler*)."

Owing to the peculiarity of the symptoms in this case and the lack of early history, together with her early death, it seemed wise to seek for a postmortem diagnosis in order to make it possible to use for future cases whatever could be learned of the exact causes for the cardiac weakness in this patient Dr. Jessie W. Fisher, pathologist to the State Asylum for the Insane at Middletown, Conn., performed an autopsy with the following result:

"*Necropsy*—Some twelve hours post-mortem. Rigor mortis moderate The patient was a well-developed, well-nourished, but undersized woman, 26 years of age, with distended abdomen, edematous feet and legs, and cyanosed face and neck. Panniculus adiposus was 3 cm. in thickness. The stomach was much distended with gas, and the abdominal cavity contained at least 2,000 c c. of straw-colored fluid.

"Thorax: Both parietal and visceral layers of the left pleura were adherent laterally, posteriorly, and to the diaphragm. The right pleura was free

"Left Lung: Weight was not taken. The lower lobe showed hypostatic congestion, the remainder of the lung being crepitant, presenting no abnormalities. Bronchi free and unobstructed.

"Right Lung: Lower lobe showed a slight amount of hypostatic congestion. Otherwise the tissue was normal.

"Heart: The pericardium was smooth and glistening and covered by a very thin layer of fat. The pericardial sac contained about two ounces of fluid blood. When the sac was opened, three ruptures on the right ventricle appeared. parallel to the descending branch of the anterior coronary artery, and 3 cm. to 4 cm. to the right of it. The first was 2.5 cm. from the pulmonary valve, and was 9 mm. in length, slit-like in appearance, involving only the superficial fibers. The second was near the apex of the heart and measured 15 mm. in length externally and penetrated the ventricle by a minute aperture. The third, immediately below and on the apex of the right ventricle, was 15 mm. in length externally, but presented only a pin-point opening internally.

"At autopsy the ruptures seemed to be in the left coronary artery, but on later dissection of epicardial fat the first rupture lay 3 cm. to the right, and the second and third ruptures 4 cm. to the right of the left coronary.

"The ruptures lay in almost a straight line with each other, and the blood had separated the epicardium above and below them, giving the appearance of a thrombosed vessel.

"The ductus arteriosus was patent and had developed into a good-sized vessel, with walls 1.5 mm. in thickness. The diameter of the opening into the aorta was 1 cm., and into the pulmonary artery was 4 mm., where it was surrounded by a thickened ring, and slight fold of membrane. It was funnel-shaped with large end in aorta and 1 cm. in length. The aortic opening of the duct was located opposite the left subclavian artery.

"Heart weighed 395 gm. (Osler gives the weight of a normal female heart as 250 gm.)

"The heart was in systole. The right side was dilated and hypertrophied, containing fluid blood. The right auricle and ventricle were nearly twice as large as normal, and the right ventricular wall was almost as thick as the left, which was also hypertrophied. The foramen ovale was closed, but the fossa was 2.5 by 1.5 cm. At its base the Eustachian valve formed a membranous valve 1.5 cm. in width and 4.5 cm. long, containing muscle fibers.

"Beneath the epicardium of right ventricle there was a marked accumulation of fat, which covered the myocardium and coronary arteries completely.

"The myocardium was thickened, pale in color, and flabby, especially in the right ventricle.

"The auriculoventricular node was well marked, lying between the fossa ovalis and enlarged Eustachian valve. The fibers seemed to pass to the left, where they were lost.

"The ventricular septum was thickened without any indications of defect.[2]

"The pulmonary artery was almost twice the size of the aorta; it was soft, and the aorta slightly thickened around the duct and valve. Insertion of the duct into the aorta was almost at a right angle.

"The cusps of the pulmonary valve were smooth, thin, transparent and competent. The cusps of the tricuspid valve were smooth, glistening and competent. The aortic cusps were slightly thickened throughout and the aortic opening stenosed. The aorta showed plaques of sclerosis around the valve. The cusps of the mitral valve showed slight thickening along the free borders. This opening was small and stenosed. The descending branch of the left coronary was small and walls thickened, but not calcareous. The right coronary was larger than the left, and like it thickened throughout its course.

"Measurements: Tricuspid, 11.5 cm.; mitral, 8.5 cm.; pulmonary, 7.0 cm.; aortic, 5.0 cm.; left ventricle, 1.3 cm.; right ventricle, 1.1 cm.

"Larynx and Trachea: The recurrent laryngeal nerve was normal in appearance, as was the vagus. The larynx, vocal cords and trachea presented no evidence of pathologic change, except for a small tracheocele situated just above the bifurcation of the trachea. Microscopically, the recurrent laryngeal nerve showed no degeneration with Marchi's stain.

"Microscopic examination of muscle near site of rupture: eosin and methylene blue sections stained poorly, nuclear outline faint or nuclei entirely absent. Muscle fibers separated from each other, and intervals filled with red blood cells. Cross striations very distinct. Some fragmentation. Soudan III sections showed muscle cells loaded with fine granules of fat. Hematoxylin and eosin same as methylene blue and eosin.

"Kidneys: The kidneys were pale in color. The capsule peeled easily, leaving a smooth surface. On section the tissue was pale; the cortex was a trifle narrower than usual, but the markings were distinct. On microscopic examination of the kidneys, capsule of Bowman showed considerable thickening and swelling of the cells lining the capsule, and the epithelial cells lining the tubules were swollen and granular. All of the vessel walls showed extreme thickening.

"Liver: The liver was slightly enlarged, but was not removed for examination.

Anatomic Diagnosis.—"Rupture of the heart and sclerosis of coronaries, patent ductus arteriosus, aortic and mitral stenosis and chronic endocarditis of aortic and mitral valves, atheroma of aorta, hypertrophy and dilatation of right heart, tracheocele, slight chronic nephritis, fatty degeneration of myocardium."

Having the autopsy report, it was not difficult to explain the symptoms during the life of the patient, for, doubtless, the primary cause of all the pathologic findings in this heart was the persistent patency of the ductus arteriosus. Dr. H. Gideon Wells[3] has found in all literature only forty-one cases of uncomplicated ductus arteriosus reported with corroboration of the diagnosis at autopsy, and in only twenty of these cases did the subject reach maturity.

In Maude E. Abbott's[4] tabulated series of 19 cases of patent ductus arteriosus, the oldest patient was 53, the youngest 6 years old; nine were males, ten females. Out of 106 cases of patent ductus arteriosus, there were eighty-seven cases complicating the defects, leaving the above-mentioned nineteen cases which were proved at autopsy to have the simple defect of patent ductus arteriosus. She gives as causes for this defect the loose musculature of the artery, the sudden change in cardiac blood-pressure at birth, and the alterations in relative position of the ductus and great vessels due to stretching, etc. The usual funnel shape of the ductus is caused by the back pressure of blood from the aorta into the pulmonary vein, but where there is congenital aortic stenosis the current should be reversed. The pulmonary artery and the right ventricle must naturally dilate, and arteriosclerotic patches are not uncommon in the neighborhood of the patent duct and aorta. As for symptoms of a patent ductus arteriosus there may or may not be a systolic thrill, but the "long machinery murmur" is nearly always produced, and the accentuated second pulmonary sound distinguishes this anomaly from pulmonary stenosis. Several other writers have also mentioned the paralysis of the left recurrent laryngeal nerve, due to pressure on that nerve by the patent duct or enlarged auricle, which causes a laryngeal spasm prolonged for hours at a time, giving the right ventricle no time to recover from the added resistance to its contraction, and therefore aiding permanent dilatation of the right side of the heart with all its attendant evils.

My case differed in many points as to symptoms from that reported by Dr. H. Gideon Wells. His patient was 42 years old, suffered from symptoms of gall-duct disease or of acute yellow atrophy of the liver, and died from a hemorrhage of the bowels with a temperature of 106, after a few days in the hospital. The previous history of his case was negative, and the examination of the heart when the patient entered the hospital showed systolic murmurs from the second to the sixth right interspace, so that a tentative diagnosis was made of aortic dilatation with enlarged heart. In the case of my patient, there was no other disease of the body and no symptoms not explained by the condition of the heart, which, however, was well hypertrophied and did not appear by percussion, palpation or auscultation to be unequal to its task. This patient was very susceptible to influenza, having one or two attacks every year. These attacks always increased temporarily the cardiac irritation, and the murmur was at such times much more noticeable than at other times.[5] In 1906, when the patient went through a successful pregnancy, the mur-

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[2] The thickness of right ventricle wall is normally 4-7 mm.; left ventricle, 20-25 mm.; left auricle, 3 mm.; right auricle, 2 mm.

[3] Wells, H. Gideon: Persistent Patency of the Ductus Arteriosus, Am. Jour. Med. Sc., 1908.

[4] Abbott, Maude E.: Statistics of Congenital Cardiac Disease (400 cases analyzed), Osler's Modern Medicine, iv, 396.

[5] Schlagenhaufer's case of acute aortic endocarditis from the influenza bacillus in a case of patent ductus arteriosus suggests, along with my case, the possibility of the infection from influenza being more virulent than in ordinary cases.

murs were very slight, not recurring until after a nervous strain six months later.[6]

It is probable that our patient might have had no symptoms from the large patent ductus arteriosus if she had had no influenza and no other subsequent cardiac complications. Death from a patent duct is usually thought to occur in infancy, although the condition is one which might be overlooked in autopsy, and 9 out of 41 patients whose cases are reported by Wells lived more than forty years.

The characteristic signs of patent ductus arteriosus are in the main those indicated by Dr. Thayer after examining our patient. Osler's[7] terse symptomatology of a persistent ductus Botalli is as follows: "Loud, especially vibratory, systolic murmurs, with the point of maximum intensity over the upper third of the sternum, associated with a lack of marked symptoms of hypertrophy of the left ventricle." Thayer suspected also a septum defect on account of the character of the murmur over the third and fourth space, but this defect was not found on autopsy. Communication between the aorta and pulmonary artery might cause much the same symptoms as from the communication between the auricles. Their etiology is different, but the physical signs of hypertrophy with systolic murmurs at apex, and generally a diastolic murmur, or continuous murmurs[8] are common to both conditions. A septum defect is, however, frequently found in hearts in which there is also patent ductus arteriosus. W. Langdon Brown[9] says: "The deficiency in the exit of blood from the right ventricle will be made good to some extent by the ductus arteriosus remaining open."

Let us now look at the patient's subjective symptoms, as explained by the condition of the heart at the autopsy, and then at the objective symptoms which called forth various hypotheses.

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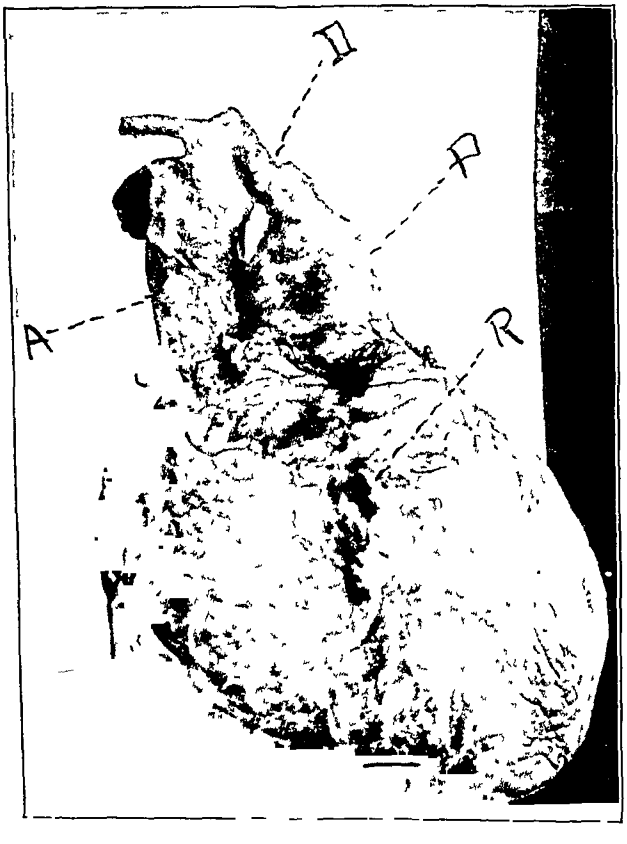

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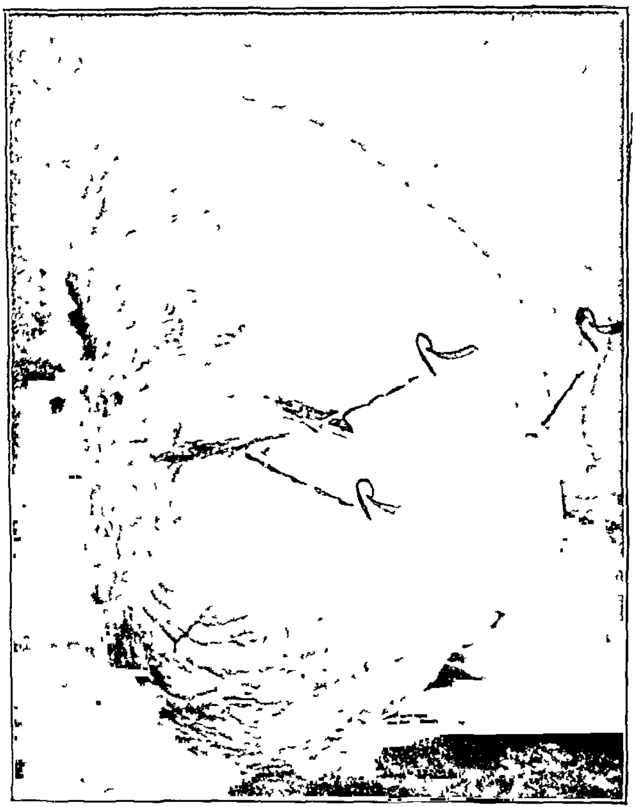

Fig 2.—Rupture seen from apex of heart.

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[22] Brown, W. L. Physiological Principles in Treatment, p. 231.

It is probable that our patient might have had no symptoms from the large patent ductus arteriosus if she had had no influenza and no other subsequent cardiac complications. Death from a patent duct is usually thought to occur in infancy, although the condition is one which might be overlooked in autopsy, and 9 out of 41 patients whose cases are reported by Wells lived more than forty years.

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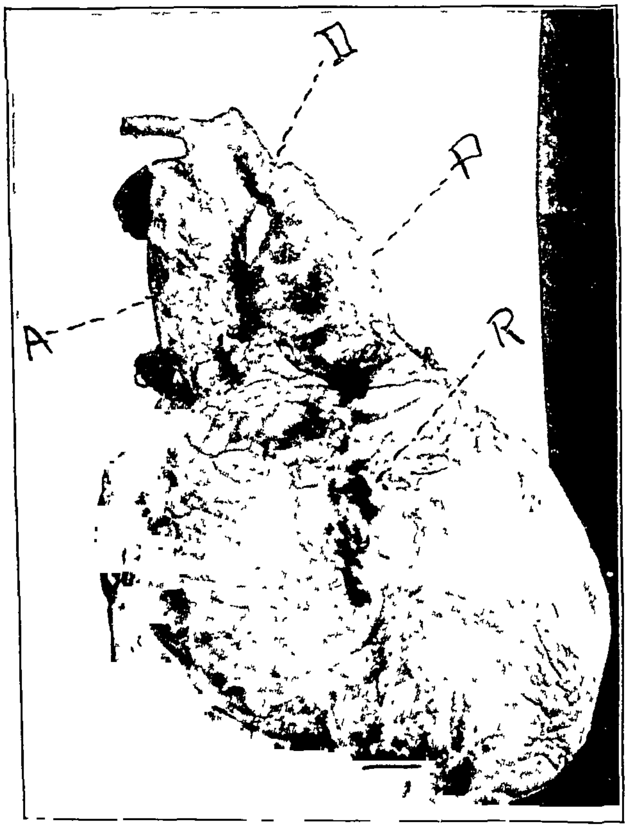

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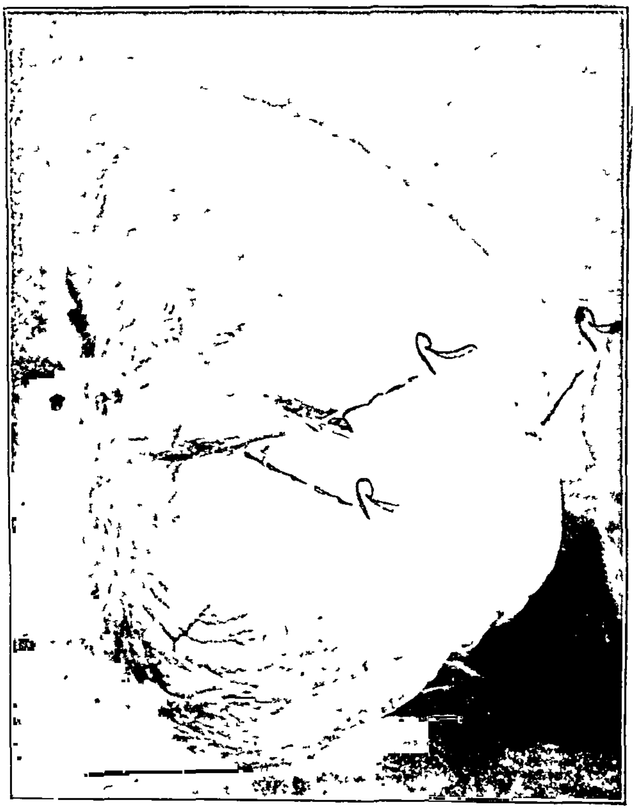

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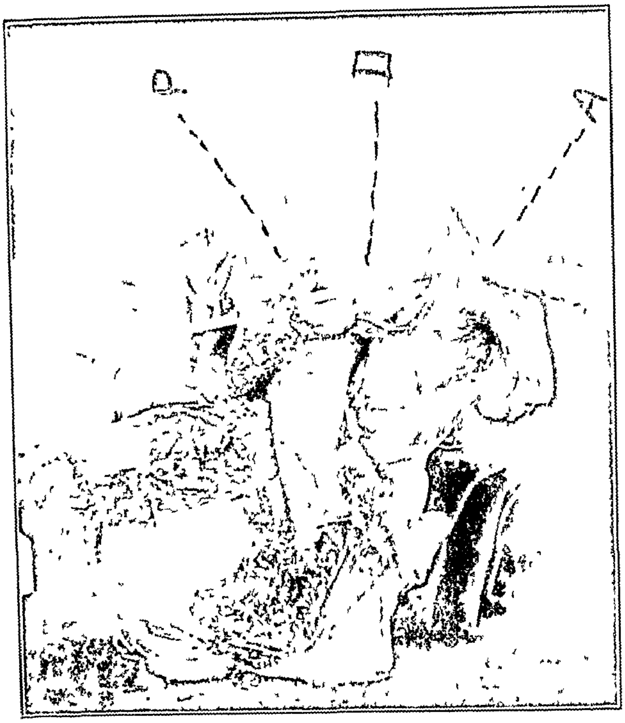

Fig 3—A, aorta: P, pulmonary artery; D, ductus arteriosus laid open, showing the opening into both the aorta and pulmonary artery

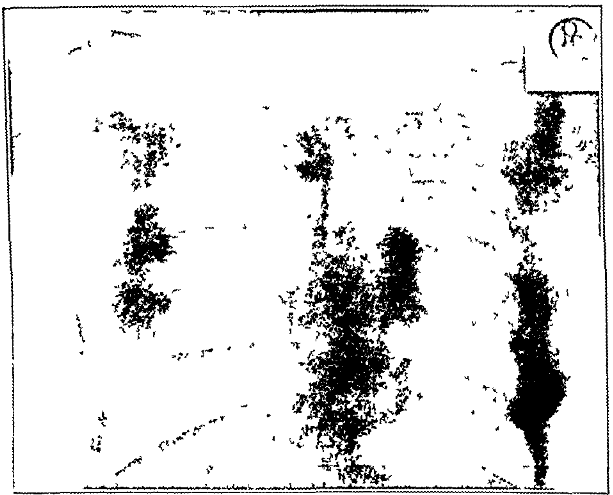

Fig 4—Radiograph taken by Dr Percy Brown, Boston, three months before the death of the patient

During all this time, despite the futility of treatment, the patient's color was very good. She was healthy looking, cheerful, interested in everything but herself, and never anxious as to her ultimate recovery, an optimism which was shared by all the consultants who examined her, as well as by me, up to the last thirty-six hours, when all the disagreeable symptoms rapidly increased, the most troublesome of all being the continuous laryngeal irritation, and which no hypodermics or any form of treatment could arrest until the final rupture of the heart and death.

The kidneys and liver shared in the general discomfort of this patient for the last two weeks of her life. The liver may be looked on as a sponge-like safety-valve to the heart, which works to its own destruction until edema and ascites occur. If death follows soon, the liver shows its engorgement; if death is postponed, the liver shrinks and shrivels. The edema and ascites in this case remained stationary, and the liver was not noticeably enlarged or fatty.

The condition of the kidneys and their function in this case is best described by Osler. "There is a great lessening in the total amount of urine excreted; darker color, strongly acid reaction which is caused by sarcolactic acid made from the poor arterial blood, and slight albumin." In other words, a mild nephritis, with thickening of the wall of the arteries such as was found at autopsy.

It is evident that we have one great lesson to learn from the history of such a case as this, namely, the necessity of early diagnosis of congenital defects in the heart, with consequent insistence on a hygienic life, protection as far as possible from infectious diseases (including rheumatism and common colds as well as influenza and children's diseases), and avoidance of nerve or muscle strain. Careful study of cardiac murmurs should teach us to know congenital anomalies, in order to differentiate them from endocardial inflammatory changes in the valves; and wherever it is possible, the diagnosis should be confirmed by autopsy and the cases studied and published for the benefit of the medical profession in the care of similar cases.

ABSTRACT OF DISCUSSION

Dr Wilder Tileston, New Haven, Conn.: I should like to emphasize the paralysis of the recurrent laryngeal nerve. Pressure by a dilated ductus arteriosus must now be added to the list of possible causes of recurrent laryngeal paralysis. A few years ago v Schroetter, jr, of Vienna, reported a case of patent ductus with laryngeal paralysis, exactly similar to Dr Mead's At that time this was the only case of the sort to be found in the literature.

SIMPLIFIED OPERATION FOR CHALAZIO

ROBERT SCOTT LAMB, M. D., WASHINGTON, D. C.

Ophthalmic surgeons have from time to time had recurrences after incising and curetting chalazia and I desire to call attention to a simple procedure which prevents the reforming of secretion in a not quite obliterated cyst wall. After anesthetizing the conjunctiva a chalazion forceps grasps the lid surrounding the tumor and the usual incision of the conjunctiva and the sac beneath is made at right angles to the lid margin. The contents are then carefully removed with a curette and the bleeding controlled A strabismus hook is then heated red over an alcohol flame, or an electric cautery point is used to gently touch the interior of the sac and so destroy the secreting surface. This has the obvious advantage over extirpation of simplifying the operation and the after treatment and of lessening the trauma. Previously I had used tincture of iodin, and at another period phenol, but nothing has been quite so satisfactory in my hands as the above procedure.

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[23] Carter, Alfred H: Article on Heart Disease, Quoted in the Internat Med Ann, 1908, p 288

SODIUM CACODYLATE IN SYPHILIS

REPORT OF A CASE

A. J. CAFFREY, M.D.
MILWAUKEE, WIS.

History.—E. H., a young man, aged about 23, presented himself for treatment with a typical chancre on his lower lip. He gave a history of having a "cold sore" on his lip, and had become inoculated about a month or so before, by kissing. The disease is directly traceable to a woman who had syphilitic mucous patches on the inside of her lips. Dr. L. F. Jermain saw the patient also, and we made the diagnosis principally from the secondaries and the history of the case, examination for spirochetes not being deemed necessary.

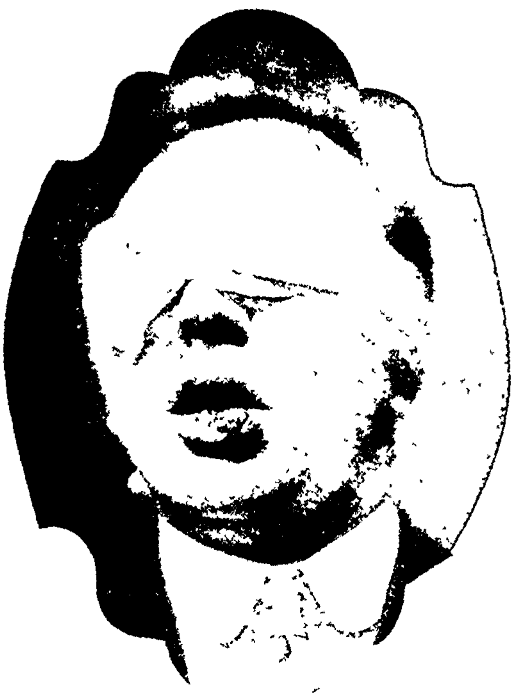

Fig. 1.—Chancre of lip at beginning of treatment with sodium cacodylate, Oct. 24, 1910.

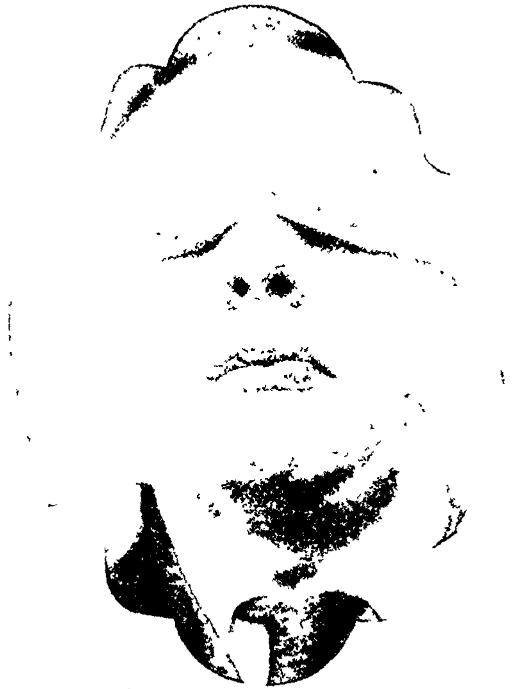

Fig. 2.—Soft, elevated, bleb-like condition, free from scab after fourteen days' treatment.

Examination.—The cervical and sublingual glands were swollen and nodular, and small papular eruptions were beginning to appear on the patient's face. He had received no treatment before he consulted me, which was on Oct. 24, 1910. The left tonsil was also swollen, as the photograph of October 24 shows.

Treatment.—I began October 24 giving one grain doses of sodium cacodylate by hypodermic injection into the pectoral muscles every twenty-four hours and continued this for eight days; then I doubled the dose for four days more. After the first dose, the pain and all the secondaries began to disappear, and at the end of twelve days all secondary manifestations had disappeared, but the chancre was not entirely healed; it was more circumscribed, however, and being afraid of the secondaries coming back, I consulted Dr. J. B. Murphy, who advised the injection of three grains daily for seven more days, which I did, with marvelous results. The scab cleared away like magic, and at the end of nineteen days' treatment all traces of the disease had left the patient, except a slightly elevated and indurated surface on the lip, which has since subsided and is forming a healthy scar under the influence of one grain doses of the drug given subcutaneously daily.

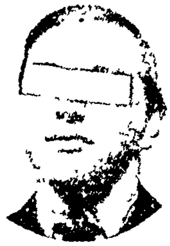

Fig. 3.—Beginning healthy scar; photograph taken Nov 20, 1910.

I treated this patient continuously from October 24 to November 20, as described above, excepting for two days while waiting to hear from Dr. Murphy. No other local or internal treatment was used. Of course time alone will tell whether the result is permanent, but I think the drug used is safe, because one can, as it were, feel one's way. I saw no disagreeable effects outside of a strong arsenical breath, which was so strong that one day the patient blew his breath on a fresh rose and it actually died inside of five minutes; this occurred at the end of a three-grain treatment. Physically the treatment had no ill effect on the patient, and he is now, as far as I can see, entirely cured.

600 Grand Avenue.

TRAPEZIUS TRANSPLANTATION IN THE TREATMENT OF DELTOID PARALYSIS

DEAN D. LEWIS, M.D.
CHICAGO

Although muscle and tendon transplantation has been used extensively during the past fifteen years to correct motor disturbances following paralysis of a muscle or group of muscles, but few cases are reported in which the procedure has been used to correct the motor disturbances associated with deltoid paralysis. Hoffa[1] reported three cases and Gersuny[2] one in 1906 in which the trapezius was transplanted into the paralyzed deltoid, and during the past year Kiliani[3] has reported another. The results in two of Hoffa's cases were very satisfactory. The third case could not be traced. In Gersuny's case the arm could be raised to the horizontal in four months and at the end of six months the range of motion approached the normal, but the movements were not carried out with much power. Kiliani's patient had a fair degree of motion after three months. Of the

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1. Hoffa, A.: Ueber die End-Resultate der Sehnenplastiken, Arch. f. klin. Chir., 1906, lxxxi, 493.

Gersuny: Eine Operation bei motorischen Lähmungen, Wien. klin. Wchnschr., 1906, p. 263.

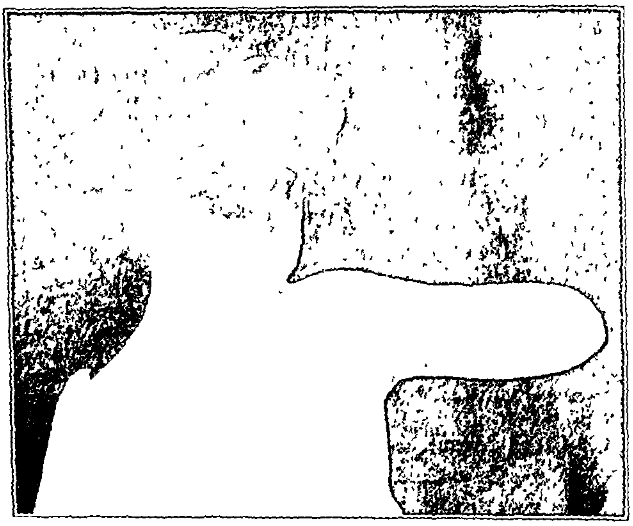
3. Kiliani, O. G. T.: An Operation for Paralytic Shoulder-Joint due to Infantile Paralysis, Ann. Surg., 1910, li, 79.

five patients operated on by transplantation of the trapezius into the deltoid, the results were highly satisfactory in four.

The object of this communication is to add reports of two cases to the five already published and to suggest a point in technic which, I believe, will prove to be of value.

The operation as originally practiced by Hoffa consisted of separating the clavicular, acromial and a portion of the spinous attachments of the trapezius muscle and of suturing the muscle which had been separated into the deltoid low down, the arm being held in extreme abduction. Gersuny practiced much the same procedure. He, however, chiselled up some bone with the trapezius, hoping that he might secure a better line of attachment by approximating this to the deltoid. Kiliani introduced two new points in the technic, (1) shortening of the capsule of the joint, and (2) plication of the long head of the biceps.

In both of the cases in which I have operated I have plicated the long head of the biceps without shortening the capsular ligament, and I believe this procedure is sufficient to overcome the pathologic subluxation in these cases.



Deltoid paralysis of nine years' standing following anterior poliomyelitis Power of abduction completely lost for nine years. Results eight weeks after transplantation of trapezius. The contracted outer border of the trapezius on the right side is prominent. History given under Case 2.

The results of the first case in which I operated were not entirely satisfactory. The imperfect result was due in part, I believe, to stretching of the paralyzed deltoid muscle.[4]

AUTHOR'S TECHNIC

In the second case the following technic was employed:

1. A longitudinal incision was made extending from the middle of the outer border of the trapezius muscle down to the junction of the middle with the lower third of the deltoid muscle.

2. The clavicular, acromial and a portion of the spinous attachments of the trapezius muscles were separated.

3. The atrophic deltoid was next separated from the clavicle and spine of the scapula and turned down.

4. The sheath of the long head of the biceps was opened, and the tendon, after being displaced from its bed, was plicated to correct the pathologic subluxation.

5. An attempt was then made to suture the trapezius low down on the humerus. This was impossible, because the spinal accessory nerve interfered. *The trapezius was then sutured* into the capsule, where it is attached to the humerus. I believe that the suture of the trapezius *into* the capsule at its attachment to the humerus is an important point. If it were possible, it would be better to suture the muscle directly into the bone lower down, but the spinal accessory nerve becomes so tense that its function would be interfered with if the attempt were made. The trapezius can easily be sutured at the line just mentioned, and apparently this attachment affords sufficient purchase to carry out the movements which follow contraction of the muscle.

6. The deltoid was then sutured over the trapezius high up, the arm being held in hyperabduction.

7. The upper part of the skin suture was sutured transversely, with the idea that shortening the skin incision in this way might aid in overcoming the pathologic subluxation. The incision when completed resembled the letter T, the *horizontal* arm of the T extending across the summit of the shoulder.

The arm was then dressed at an angle of about 100 degrees, and maintained in this position for about four and one-half weeks. Then it was gradually lowered.

The results at the end of eight weeks are shown in the accompanying illustration. The patient raises the right arm, the forearm being flexed, quite rapidly to the horizontal, but she cannot hold the arm in this position for any great length of time. The movements are carried out with precision and power. The outer edge of the contracted trapezius can be seen in the illustration. No contraction of the deltoid takes place. The pathologic subluxation has been overcome and the appearance of the shoulder has been improved, as it now has a rounded contour. There had been complete loss of abduction in this case for nine years. Paralysis of the deltoid was apparently due to anterior poliomyelitis.

The following are the histories of the two cases:

Case 1.—*History.*—Mr. E. B., aged 25, was referred to me Jan. 17. 1910, by Dr. Thor Rothstein, who suggested that the trapezius muscle be used to correct the effects of the deltoid paralysis. Two years previously, the patient had fallen into a pit and had injured his chest and left shoulder. He soon went back to work, but was *unable* to use the left arm as he did before the injury. About two weeks after the accident, he was taken sick, with high fever, nausea and vomiting, headache and pain in the muscles of the neck. After about thirty-six hours the left upper extremity was almost completely paralyzed.

Examination.—The left upper extremity hung perfectly limp. The muscles about the shoulder were flattened and atrophic. The supraspinous and infraspinous *fossæ* were sunken; the acromion process was prominent and the head of the humerus was displaced downward and forward: two fingers could be placed in the groove between the acromion and the head of the humerus. The forearm could not be flexed and the muscles on the anterior surface of the arm were atrophic; the biceps and brachialis anticus were paralyzed. There was some pronation, but both pronation and supination were seriously *interfered* with. The fingers were partially flexed in a position *somewhat* suggestive of claw-hand and the interossei muscles were atrophic. Sensation in the entire extremity was somewhat impaired. The patient had no motion in the *upper extremity*, except a peculiar swinging movement, *which occurred* when he swayed the entire body.

Operative Results.—These were not altogether satisfactory. The pathologic dislocation was *corrected*; there was some abduction of the arm, but the *improvement* did not permit any great range of motion. The failure was in part due, I believe, *to* the lengthening of the paralyzed deltoid muscle, on which depended the transmission of power obtained by transplantation of the trapezius.

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[4] Bradford, in the August number of the American Journal of Orthopedic Surgery, reports seven cases of deltoid paralysis treated by the periosteal silk strand transfer method. The results were satisfactory. He believes that this method does away with the possibility of stretching of either the transplanted or paralyzed muscle.

Case 2.—*History.*—Miss K., aged 18, up to the age of 9, had had full use of the right arm. At this time she fell from a fence, a distance of about 4 feet, and struck on the summit of the shoulder. Immediately following the fall there was some loss of function, but this, as the patient stated, was due to local tenderness about the shoulder. Following the fall, the patient was sick in bed for about two weeks. She could not state the nature of her illness, but at the end of one week there developed, quite suddenly, paralysis of some of the muscles about the shoulder. This was evidently a case of cervical poliomyelitis, although the history is somewhat suggestive of an ascending neuritis of the axillary nerve.

Examination.—The right arm hung limp. The shoulder was flattened, the head of the humerus was displaced downward, so that a finger could be placed in the groove between it and the acromion. The supraspinous and infraspinous fossæ were full, but rotation was somewhat interfered with. The latissimus dorsi was somewhat atrophic. There were no sensory disturbances. The muscles of the arm were well developed, but flexion of the forearm was nót as strong as on the opposite side.

Operative Results.—The trapezius was transplanted as described, and at the end of eight weeks the arm could be raised to the horizontal, as indicated in the figure.

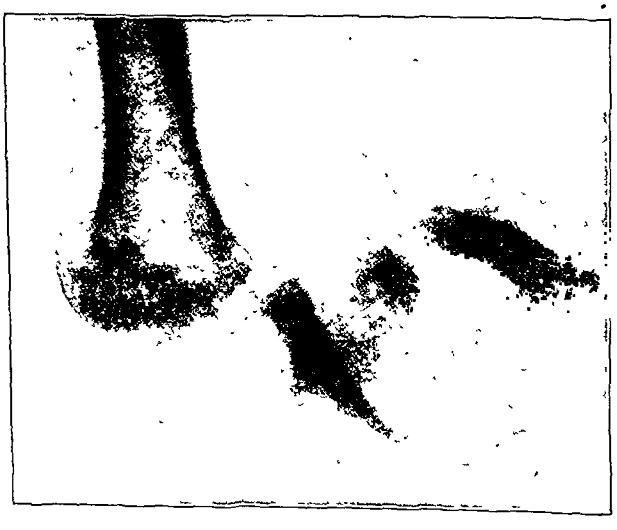
150 Michigan Avenue.

CONGENITAL DISLOCATION OF THE SHOULDER-JOINT

VICTOR F. HUNTLEY, M.D.
MANTON, MICH.

The skiagram shown here was taken during some experimental work on the chest, in an effort to demonstrate early tuberculosis. The case appeared to me to be so unusual at least, that I thought it might prove of interest to the many readers of The Journal; hence this report:

The case is that of a young man aged about 30, who has always been able by raising the arms above the head to produce a complete dislocation of the head of the humerus; the dislocation being downward and outward as is well portrayed by the skiagram. This anomalous condition causes no discomfort, as his occupation does not require any considerable employment of his arms in an overhead position, and the head of the humerus immediately resumes its proper place when the arms are in their resting position, the excursion of the head apparently causing no irritation of the surrounding ligaments and muscles.



Skiagram showing congenital dislocation of the shoulder-joint.

The point of particular interest, to myself at least, in this case is the position of the spine of the scapula and the apparent open space between or at the junction of the clavicle and the acromion process of the scapular spine. The skiagram was taken with the patient lying on his back on the table, arm drawn up and flexed at the elbow with the hand under the head. The extreme mobility of the scapula is well shown in the skiagram as well as the marvelous flexibility of the scapula and clavicle in the upward movement of the arm. The apparent break in the epiphysis is no doubt more apparent than real, the rays undoubtedly passing through the more porous texture of the bone. It serves to show the junction of the bones very clearly, and their relation to the coracoid process is also well developed while in this exaggerated position, and it brings out with great satisfaction the wonderfully flexible bony protection to this greatest of all joints, the human shoulder.

SPOROTRICHOSIS IN AMERICA

RICHARD L. SUTTON, M.D.
KANSAS CITY, MO.

Since the publication of my recent article on sporotrichosis,[1] I have received communications from several physicians regarding similar cases which they have encountered in their work. Although cultures were made in only a few instances, the clinical manifestations in the majority of the cases were such that there can be little doubt regarding the nature of the causative agent. Four other American cases have been reported since my article was written, one by Stelwagon,[2] one by Pusey,[3] and one by Hyde and Davis[4] (who refer to a third Chicago case under the care of Dr. Zuraski).

Pusey has suggested that the affection probably occurs much more frequently than statistics would indicate, and my experience certainly tends to prove the correctness of this supposition. The lesions often resemble those of tertiary lues, and as they heal promptly under antisyphilitic treatment it is very probable that many cases of sporotrichosis have been incorrectly diagnosed, but successfully treated, as instances of gumma. When the characteristic symptomatology of the affection is borne in mind, however, this mistake is not liable to occur.

A traumatic lesion of the hand, forearm, or leg which proves resistant to ordinary surgical treatment, and is accompanied by the development of one or more sharply circumscribed, painless, cutaneous or subcutaneous abscesses along the course of the limb, should always arouse suspicion, especially if the inflammatory manifestations typical of a streptococcic cellulitis are absent. A microscopic examination of the contents of the abscesses is usually negative, although the organism multiplies readily on agar and other simple culture media.

In France it has been found that the disease occurs more frequently in the rural districts than in the cities (owing to the fact that the sporothrix thrives best on vegetable matter, thus affording abundant opportunity for the infection of slight open wounds on the hands and arms of farmers and others of similar occupation).

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[1] The Journal A. M. A., Sept. 17, 1910, p. 1000.

[2] Stelwagon: Diseases of the Skin, Ed. 6, 1910, Philadelphia, W. B. Saunders Company, p. 1119.

[3] Pusey: Jour. Cutan. Dis., xxviii, 352.

[4] Hyde and Davis: Jour. Cutan. Dis., xxviii, 321.

Since sporotrichosis in man is comparatively rare in America, the two following cases of the disease, and one of syphilis simulating sporotrichosis, are of interest.

Case 1.—This occurred in the practice of Dr. Ira B. Chadwick of Tyro, Kan. I am indebted to Dr. Howard Hill of this city for a photograph of the affected limb (Fig. 1), and for other courtesies. The history, taken by Dr. Chadwick, follows. The patient, A. B., was a farmer's boy, aged 11, a native of Missouri, and a resident of Kansas. The cutaneous history of the family is negative. The lesion developed from a hen bite on the back of the right hand. The wound had ulcerated under home treatment, and when first seen by the physician was oval in shape, with a raised border, and about the size of a silver dollar. Abscesses began to form on the forearm about four weeks after the injury was received. In the course of two months twenty-one abscesses developed. These were opened, treated with antiseptics, and later excised completely. At no time was there any glandular enlargement. The abscesses were confined to the arm, no other part of the body being affected. A number of microscopic examinations of the contents of the abscesses were made (methylene blue, Wright's, and carbol-fuchsin being used), but no micro-organisms were found. The pus resembled "thickened cocoanut milk." None of the incised lesions showed a tendency to heal, and recovery took place only after the entire wall of each abscess had been dissected out. Dr. Chadwick was repeatedly advised by other physicians to amputate the limb, but refused to do so. The patient was discharged cured at the end of ten weeks. Considerable scarring remains, but the patient retains perfect use of his arm.

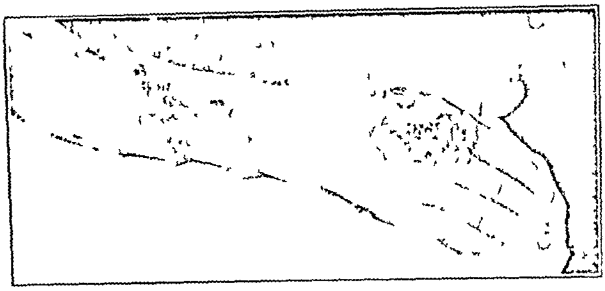

Fig. 1.—Wound on dorsum of hand with typical chain of abscesses extending up the forearm (Case 1).

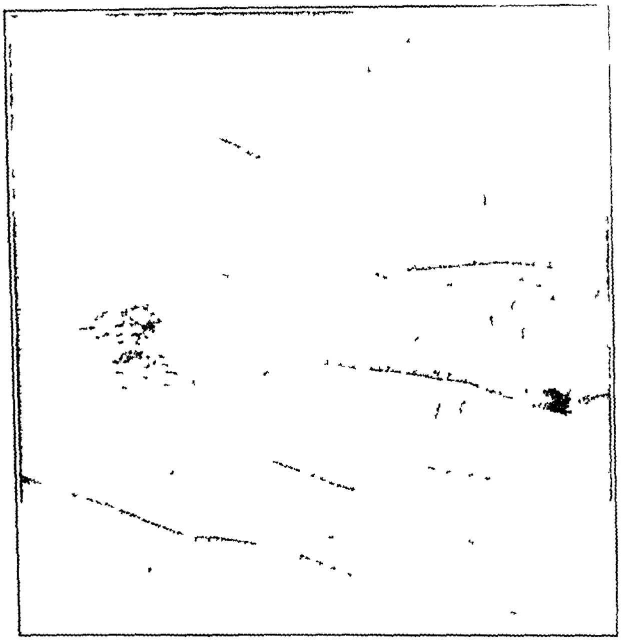

Fig. 2.—Site of original wound (3 months after injury was received) in Case 2.

Case 2.—This occurred in the practice of Dr. N. P. Wood of Independence, Mo. The cultures were made and the etiologic organisms isolated by Dr. Frank J. Hall of this city, to whom I am indebted for the case history and for the photograph (taken by Dr. Hall's associate, Dr. O. L. Castle). The patient, L. M., was a farmer's daughter, aged 18, a native of Kansas and a resident of Missouri. The cutaneous history of the family is negative. The lesion developed from a slight wound on the back of the right hand, the patient having accidentally injured herself while feeding Kaffir corn to domestic animals. At the time the photograph was taken (Fig. 2) the lesion had been present three months. Two small, subcutaneous abscesses were present, one just above the annular ligament and one midway between the wrist and elbow. The sporotrichosis (Schenck) was secured in pure culture from one of the abscesses. All of the lesions healed promptly under the administration of potassium iodid.

Case 3.—This occurred in the practice of Dr. C. D. Osborne of Highpoint, Mo. The patient, R. S., a farmer's daughter, aged 16, a native of Missouri and a resident of Moniteau County, Mo. Two months prior to the date on which the patient consulted Dr. Osborne, she had received a slight incised wound on the ball of the index-finger of the right hand while manipulating a kraut-cutter. The lesion refused to heal, in spite of the application of spirits of turpentine and various other household remedies. At the time of the examination this lesion was about the size of a dime, and was partially covered with a layer of disintegrated epidermis and stringy, adherent pus. Beneath this coating were masses of exuberant granulation tissue which bled easily, but were not painful to the touch. The surrounding skin was undermined with pus, but there was no areola of hyperemia. Extending up the ulnar side of the forearm and the inner side of the upper arm was a chain of cutaneous and subcutaneous abscesses, eleven in number. Two of these, both located near the wrist, had ulcerated through the epidermis and thick, brownish pus exuded when pressure was applied over the lesions. There was present no evidence of a coccic cellulitis, the glands were not involved, and there was practically no pain. Only the right hand and arm were affected. After employing antiseptics for a few days, Dr. Osborne concluded that the case was an unusual one of syphilis and placed the patient on mixed treatment. The lesions slowly healed, in the course of four or five weeks, leaving slight scars.

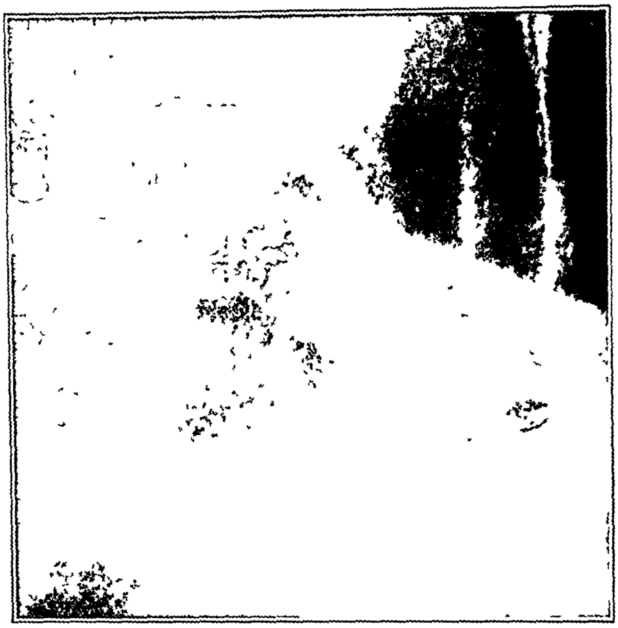

Fig. 3.—Ulcerated gummata (syphilitic) resembling the ulcers sometimes seen in sporotrichosis. The lesions are irregularly grouped, however, and considerably indurated.

610 Commerce Building.

CONSERVATIVE SURGERY OF THE PELVIC ORGANS AND THE LOWER ABDOMINAL WALL *

FLOYD W. McRAE, M.D.
ATLANTA, GA.

It is not my purpose to attempt to present anything new, but rather to discuss end-results in pelvic surgery from the viewpoint of a practical man who has kept in exceptionally close touch with his cases, prior to and following surgical operations.

For fourteen years I did a very active general practice with a constantly increasing surgical element. For ten years now, I have limited my work to surgery and surgical consultations.

I reside within 200 miles of where I was born in a community of Scotch settlers as clannish as native Scots; I am of Scotch extraction, a member of perhaps the most prolific and ramifying family of all those Scotch pioneers. A great deal of my surgery has been done on these relatives and life-time friends, thus enabling me to follow up my cases.

Atlanta has been the field of my professional activities, her population nearly trebling during my residence there. As a general practitioner doing surgery, I knew intimately postsurgical results. I simply state these facts as explanatory.

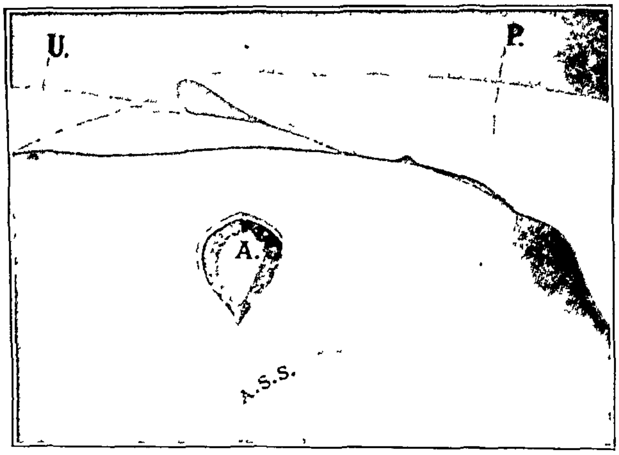

Fig. 1.—Initial incision in author's operation for appendicitis A, aponeurosis; U, umbilicus; P, pubes; A. S S, anterior superior spine

On account of these unusual relations, I have been intensely sympathetic and individual in my surgery, forgetting sometimes, I fear, the general good of surgery, in the (to me) all-absorbing problems of the case in hand. What will enhance this individual's chances for recovery? What will promote his or her permanent, complete restoration to health and comfort? In this intensely personal application of surgery, I may have unwittingly failed in a measure to bear in mind always that obverse of the picture—the greatest good to the largest number.

Thus following up closely and keeping in touch with my postoperative cases, I have not infrequently been chagrined to find that while the surgical procedures were "successful," the patients were not cured; or there were sequelæ quite as disabling, often more disquieting, than the conditions for which the operations were done. This has been notably true of complete oophorectomies and complete salpingo-oophorectomies.

We have only to review our pelvic surgery—to follow up our cases—to find many instances in which surgery has proved harmful rather than helpful. This is not really the fault of surgery or of surgeons. New procedures must be worked out carefully, followed up conscientiously, and reports of results made faithfully, that we may know *just what to expect.*

The Battey and Tait operations, championed by many of the most brilliant and esteemed abdominal surgeons, initiated a "furor operativus" that cost hundreds of thousands of women their ovaries with the consequent disabilities and neuroses that so frequently follow oophorectomy. How many homes have thus been rendered childless, loveless and broken up by our former lack of knowledge of the internal secretions of these organs! My first laparotomy was done for tender, cystic ovaries, which I removed successfully, but with infinite disaster to my patient. Poor creature! For nearly twenty years I watched her wasting life. During this whole time she was a loyal patient. I did everything I knew; referred her to all kinds of specialists, only to get her back with that appealing look for help. She died eventually with cancer of the uterus. What influence, if any, my operation on her two decades ago,

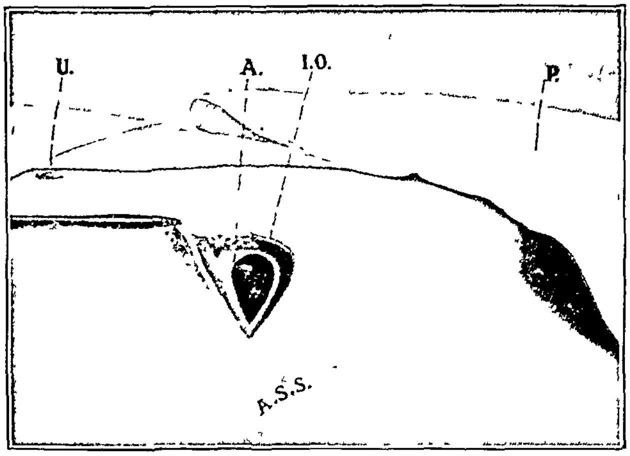

Fig 2.—Second step in author's operation I O, internal oblique muscle. Other lettering same as in Figure 1

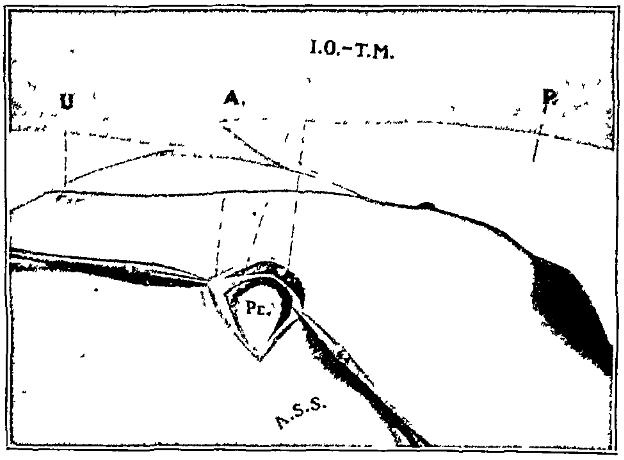

Fig 3.—Third step I. O-T. M., internal oblique and transversalis muscles, separated and retracted; Pe., peritoneum Other lettering same as in Figure 2.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

which made her miserable, bore on her as an etiologic factor of her fatal disease, I do not know. But of one thing I am sure, and that is that if I had been more conservative her resisting powers would not have been lowered.

I shall deal with the subject of conservative surgery from an individual rather than from a collective standpoint.

Every patient submitting his or her case to the surgeon (in the absence of urgent necessity for immediate operation), has the right to expect and should receive an exhaustive examination for diagnosis, and thereupon a mature prognosis after a carefully considered detailed history.

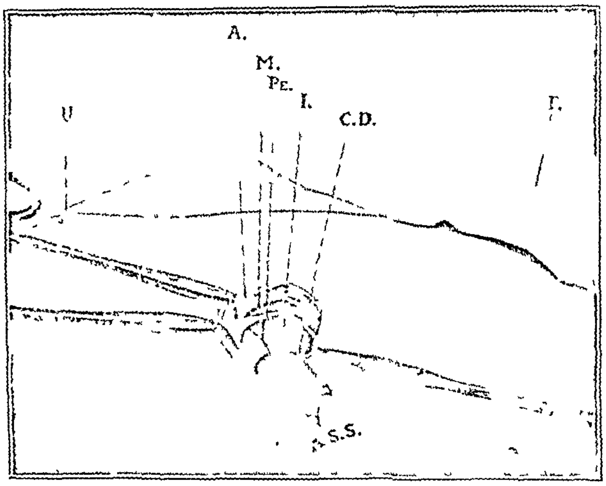

Fig 4.—Fourth step Cigaret drain (C D) inserted in outer angle of wound M, muscles separated and retracted; I, intestine Other lettering same as before

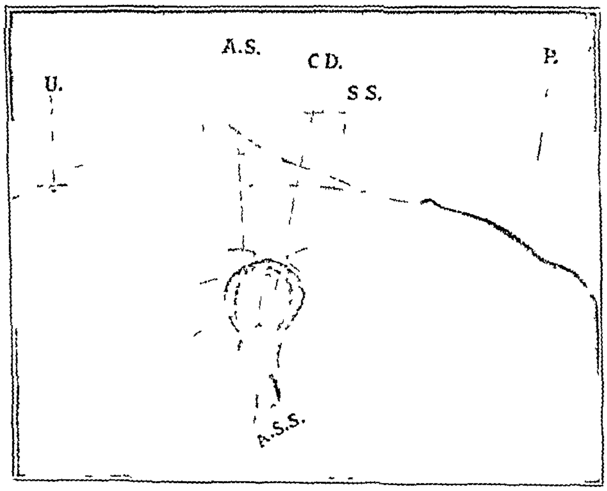

Fig 5.—Fifth step A S, aponeurosis sutured; S S, silkworm gut sutures Other lettering as before

It is quite too much the vogue for operating surgeons, after a desultory history and hurried examination to make some such remark in the operating-room as—"there is something wrong in this abdomen. I will tell you what it is after I open up and see inside." Such remarks have a bad influence on medical students and young surgeons, tending to the far-too-prevalent practice of rushing patients to the operating-table to be opened up for general results. The general practitioner finds many of these patients returned to him surgical victims rather than surgical victories. Such work excused, if it did not warrant, the epigram, "furor operativus," made by a brilliant, lamented surgeon of international reputation in his presidential address before the last Atlanta meeting of the American Medical Association. Such work, in a measure, justifies the feeling on the part of some internists that they must stand between their patients and operating surgeons. We should not be satisfied to have our patients simply recover from operations. Surgery that does not benefit or cure the patient is harmful, lessening confidence in surgery and surgeons, and often deterring those with serious surgical conditions from submitting to necessary operations.

By conservative surgery I mean that type of surgery that aims at conserving tissues and functionating organs in whole or in part, when this can be done without undue harm to the life of the individual.

Considering the subject as a whole, radical surgery is frequently the most conservative surgery. No surgeon could possibly believe more firmly, nor advise more earnestly, than do I, prompt interference in acute appendicitis, acute obstruction of the bowels, perforation of the alimentary tract, penetrating wounds of the abdomen, etc. Delays under these, or like tragic conditions, to make hair-splitting diagnoses, are little short of criminal. Here it is the surgeon's duty, as stated by a distinguished southern surgeon, to "get into the abdomen as quickly as possible, do the essential work, and get out of the abdomen as quickly as possible." Where, however, there is nothing urgent, failure to consider seriously the individual from every viewpoint is equally reprehensible.

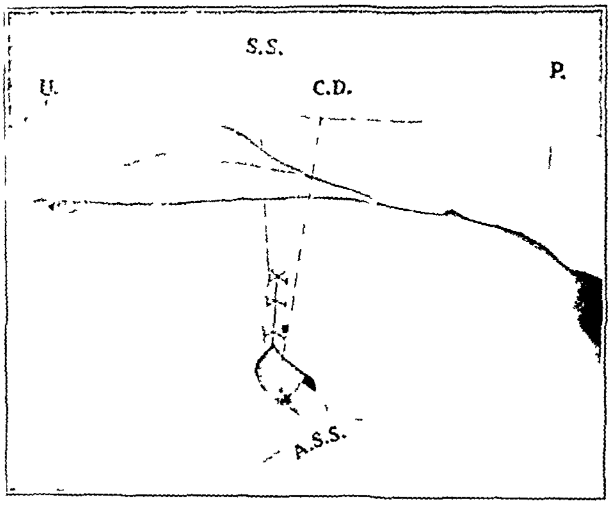

Fig 6.—Operation completed Silkworm gut sutures tied.

Neuroses, intestinal toxemias and parasites, visceral ptoses, as well as heart, lung and kidney conditions, should all receive careful consideration and be given due weight. *Repeated examinations* of the urine, examination of the stomach contents and feces, examination of the blood, x-ray examinations covering a period of from two to ten days, should be made. Two days may be sufficient; ten days is a period none too long to keep some of these patients under observation and treatment before resorting to surgery. In doubtful complicated conditions even weeks of observation may be necessary. Thus by a systematic plan of coordination and elimination, we may arrive at far more accurate diagnoses and give better advice as to treatment.

I began doing conservative work on the ovaries and tubes in September, 1903, impressed by the many hopeless and helpless wrecks following my own complete salpingo-oophorectomies, and similar wrecks following like operations done by other surgeons and gynecologists which came under my observation. At that time no conservative work was being done in Grady Hospital, our large city hospital, nor was there, so far as I was then aware, any being done in my vicinity. Prolapsed ovaries, cystic ovaries, were removed with their tubes. In acute pelvic infections and pus cases, the tubes and ovaries were also completely removed. Hysterectomies were frequently done in addition.

I have been largely influenced to bring these subjects before this Section for discussion by the recent articles on conservative surgery of the ovaries by Dr. J. O. Polak,[1] of New York, Dr. R. A. Barr, Nashville, Tenn., and Dr. James W. Cokenower, of Des Moines, Iowa, all of whom practically condemn conservative surgery of the ovaries and tubes. Their reasons as given are: fewer immediate cures, the large number of patients returning later for radical operations, after conservative operations have failed. The small percentage (5 per cent. to 10 per cent.) of women bearing children after conservative operations, seems, however, to be their chief argument.

My own experience differs materially from the experiences of these gentlemen in every particular. My observation of several hundred complete operations done in hospital and private practice, and later personal experience with 135 conservative operations on the ovaries and tubes, has satisfied me that the number of complete and satisfactory cures is larger following the conservative operation than following radical procedures. Some of the patients on whom conservative operations have been done return for later operations, conservative or radical, as indicated; just as many patients on whom radical operations have been done return later for the breaking up of adhesions, partial or complete intestinal obstruction, etc.

My conservative operations in married women have been followed by a fraction less than 16 per cent. of known pregnancies and safe deliveries of healthy children. I do not doubt that some of those who have passed from under my observation have also borne children. Most of my conservative operations, however, have been done on young women, and here I think the results have been even better than in married women. Artificial menopause has been prevented, the natural characteristics of the woman have also been preserved; they have retained their womanly traits and their womanliness. They have been preserved from that feeling of being set apart from their kind which comes to most of the women that I have known on whom radical operations have been done. I may have been peculiarly unfortunate in having these poor creatures appeal to me so frequently for help; but my inquiries among general practitioners, gynecologists, and neurologists, have confirmed my own experience. Almost without exception my own observation is confirmed by the general practitioners and female gynecologists, who have large opportunities for observation and intimate knowledge of these cases, making their observation especially valuable; and neurologists to whom these miserable creatures are referred as a last resort, to eke out their remaining days in abject suffering, despondency and disappointment. I have discussed this subject freely with Dr. Sawyer, our leading woman gynecologist and obstetrician, and have her consent to quote her experience, with reports of typical cases. I have also talked the matter over frequently and in detail with Dr. E. Bates Block, our leading neurologist, and his experience coincides almost exactly with that expresed above.

The argument that only 5 to 10 per cent. of pregnancies follow conservative operations, and therefore these operations should be condemned, seems to me to be not well supported, or based on sound fundamental facts and reasoning. When we consider the thousands and thousands of radical operations that have been done during the last twenty-five years, and the ever-increasing tendency towards race suicide, even this small percentage of homes preserved and children borne is no small argument.

As we work out these conservative operations more in detail, with better technic, a larger and larger percentage of pregnancies will follow.

There must always be a great difference between the results obtained in private practice amongst the better classes of people and the results obtained in large charity hospitals. A large percentage of these latter cases cannot be followed up, and their subsequent histories as to operations and pregnancies cannot be gathered with any degree of accuracy.

I am constrained to insert here the report of five cases from the pen of a woman physician, who was a nurse before she studied medicine. She says:

> Than that of the poor, miserable woman, undergoing the nervous changes following the entire removal of both ovaries, there can be, to me, no sadder state in life. An observation of these cases covering some seventeen years, many of them women whom I had known prior to operation, convinces me that their last state is worse than their first.
>
> Reviewing the history of a number of these women, who, in a vain hope of finding some relief, have sought me, I find the invariable and most marked symptom is that of despondency; sooner or later the feeling of utter hopelessness is theirs. Restlessness, discontent, inability to engage in former duties or pleasures, bitterness and fear of the future, together with loss of power to control the emotions, are always present. A scene of weeping is a part of every interview. The physical findings vary only slightly—a narrow vagina (frequently it is with difficulty that I introduce the examining finger, even in those who have borne children), a small cervix, which bleeds on the slightest touch, as does the vaginal mucosa; the uterine body is small and exquisitely tender. These examinations are always made with difficulty, provoking the most exaggerated nervous manifestations.
>
> Case 1.—Miss M., aged 22, on whom I saw the operation done in January, 1895, came to me in the spring of 1904, nine years afterwards, with an appeal to do something to help the "unbearable nervousness" from which she suffered. She was despondent and altogether miserable. Her home life, she admitted, was all that it could be to make one happy, but she took no enjoyment in it. Examination showed the typical condition described.
>
> Case 2.—Miss B., aged 21, operated on in September, 1896, of a cheerful, happy disposition, as I remembered her in girlhood, was so changed, when I again saw her in 1905, that I would not have recognized her as the same. She expressed herself as never having had one moment's freedom from pain and nervousness since the operation; she wished that she had died at the time. She had consulted various specialists, North and South, with no assurances of relief by operation or treatment. Examination showed the vagina so contracted that it was almost impossible to introduce the index-finger, a diminutive uterus so tender as to cause an outcry of pain on the slightest touch, and profuse bleeding from the gentlest manip-

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[1] Polak, John Osborn: Final Results in Conservative Surgery on the Ovaries, The Journal A. M. A., Oct. 22, 1909, p. 1382.

ulation. She is now a hopeless wreck, with the bitterest condemnation of the surgeon who did the operation.

Case 3.—Mrs. C. had a double ovariotomy nine years previous to consulting me. At no time since the operation had she been so well as before, and at the time that I saw her she was a bed-ridden invalid. She complained of pain in every part of the body (with no disease of any organ that I could find), of wretchedness and despair. The trend was a lament that she was a burden to her husband and family, and wished she were dead. The atrophic vaginal and uterine changes were most marked. She underwent an operation some months ago for what the surgeon termed "adhesions," but says she is in no way benefited by it.

Case 4.—Mrs. H., with a history of an operation done twelve years ago, presented herself, with symptoms similar to those of Mrs. C. She was a woman of unusual strength of character; her effort to overcome the train of nervous symptoms which have followed the operation has been of the strongest. She views the future without hope, but is trying to make the best of an empty life. And so I might tabulate the entire list, finding only the slightest variation in phases of nervousness or physical signs.

Surely these victims of mistaken judgment should invite a plea for conservative surgery on the ovary.

AUTHOR'S INCISION IN APPENDICITIS

Let me now direct your attention to my method of opening the abdomen for appendicitis, simply to place it on record. The hernias following late operations for acute suppurating and fulminant appendicitis are disabling, sometimes dangerous, and usually preventable.

May 10, 1903, in my one hundred and twelfth operation for appendicitis, I made my first transverse cut to reach a gangrenous appendix. It then seemed to me that such a cut would give better exposure, better drainage, less trauma, and leave the abdominal wall far less liable to subsequent hernial development. An experience covering seventy-six cases in late, neglected, acute appendiceal abscesses, in perforative and fulminant appendicitis, many with advanced spreading peritonitis, has abundantly demonstrated the feasibility of the operation, and has proved it to be the best incision in my hands for such cases. I do not advocate this incision in cases suitable for the McBurney gridiron operation. or those associated with pelvic pathologic conditions that should be dealt with at the same time.

I make a transverse cut well out in the flank through the skin and superficial fascia, buttonholing the aponeurosis; then separating the transverse fibers of the internal oblique and transversalis muscles I next make a transverse cut through the transversalis fascia and peritoneum. This incision, if made well to the outside, gives the very best possible drainage outlet in appendiceal cases. It is easily retracted, giving much more room and better exposure than does a lateral incision to the outside of. or through, the fibers of the right rectus muscle. While there is a direct opening through the whole abdominal wall, two muscle layers, the internal oblique and transversalis, are practically uninjured, the nerve and blood-supply little interfered with. lessening also the danger of inguinal hernia. Where complications are encountered, and still more room is needed, the incision may be extended to the median line, through the skin and superficial fascia, the internal oblique and transversalis muscles separated to the edge of the rectus, the sheath of the rectus cut transversely and the edge of that muscle lifted up. The posterior sheath may also be cut if necessary. The advantages of the operation are: facility, better drainage, better exposure, protection against ventral hernia, and less danger of inguinal hernia following.

I have followed up many of my transverse operations, and in all of the cases observed have found a good solid scar. Certainly some hernias will result. That I do not advocate or employ the transverse incision as a routine, is evidenced by the fact that I have performed this operation only 76 times in the last 567 appendectomies.

ABSTRACT OF DISCUSSION

Dr. **Alexander Hugh Ferguson**, Chicago: The end-result of operating on prolapsed ovaries and on small cysts in the ovaries has, no doubt, been pretty well decided in the experience of almost every surgeon of note. This work does not entirely belong to the gynecologist: surgeons deserve a great deal of credit. I have not for its own sake removed a prolapsed ovary in twenty years. I have removed small and large cysts from ovaries in hundreds of cases, but I have always conserved all the ovarian tissue I could, just as Dr. McRae has. I have done this not merely to favor the propagation of the race, but to maintain the mental equilibrium and happiness of the patient. These cases can be divided into two classes. First, there are the patients who are not nervous primarily, but who have cystic and prolapsed ovaries. One cannot class them with the neurotics; however, if allowed to continue in that state they will become nervous. If those ovaries and tubes are removed simply because they are displaced and a little cystic, these patients can be converted into hopeless neurasthenics. Then there is a second class that comes before us prominently to-day. What shall we do with a neurasthenic patient who is suffering with pelvic tenderness, due to prolapse, uterine disease or cystic ovaries? Shall we operate on these patients? Why not? If we do not operate the condition becomes profound and the patient may become insane. The majority become invalids. If we remove the pathologic condition from the pelvis, we remove a certain amount of the irritation that was interfering with the well-being of the patient or that caused the displacement of the ovary, etc. Shortening the ligaments, removing the cysts and making the pelvis as nearly normal as possible, will not interfere with the nerves of the patient, nor with her mentality. Some surgeons have stated that no operation should be done on a neurasthenic. That is a mistake. Even the insane claim our honest attention, and removal of diseased tissues will often better the patient's mental condition. Then we come to the very acute cases, in which surgery has not often been practiced. A young woman became pregnant, and fearing discovery, because she had been married secretly, she went to an abortionist. She developed acute pyosalpinx, with a temperature of 105 F, I opened the Douglas' cul-de-sac and found pus there and also a double pyosalpinx. I then opened the abdomen and found the appendix involved secondarily. What would you do? Ablate these tubes? No! I split the fundus of the uterus transversely and drained the pus into the uterus. The fimbriated ends of the tubes were opened. In five weeks this young woman left the hospital apparently in an excellent condition.

Dr. **J. M. Baldy**, Philadelphia: It seems a pity that surgeons should go to the extreme on any surgical subject in this day, and especially when it is a question of pelvic surgery, pure and simple. To acknowledge oneself as always doing conservative surgery or as always doing radical surgery, is a tacit acknowledgement of mental immaturity. A great deal is said about conserving the pelvic organs, and much is said about complete hysterectomy and the removal of everything, but very little is said about a very essential feature, one regarding which all thorough surgeons and gynecologists agree, and that is to make a proper diagnosis, and to know beforehand whether any operation should be done. Therein lies the great evil, the great harm of all this work. More patients are injured, not because they have the ovaries and tubes removed, or because any conservative surgery is done, but because they were operated on at all when operation was not indicated. They were simply neurasthenics, patients who belonged to the neurologist, who needed common-sense, outdoor life, or anything else you choose, except to fall into the hands of the surgeon. That is a lesson everyone of us must learn. It is a fact that where you find a young community of young surgeons, that is, surgeons young in surgery, and where you find that other class of men, the so-called general surgeons, men who dabble in everything—surgery, gynecology and what not, you will find that many unnecessary operations are done; that is, many patients are operated on when what they really need is medical care.

Dr. Hyman M. Folkes, Biloxi, Miss.: The diagnosis is the essential feature in these cases. As Dr. Baldy well put it, every sensible man, every man of large experience, will know when to operate and what to do after he has entered the abdominal cavity. Practically 50 per cent. of these cases are not operative cases. Dr. McRae brought out a point that few surgeons have realized to any great extent, and that is the end-results of injudicious surgical procedures. I have had many patients who have been operated on times without number. I remember one woman, aged 30, who had been subjected to sixteen operations, and she was in as bad a condition after the sixteenth operation as she was before the first, if not worse. The younger these women are when they are robbed of their ovaries, the worse off they are in every respect; I mean women who are operated on injudiciously. Every sensible person knows that when there exists in the abdomen any condition requiring radical surgery, it should be done, regardless of end-results. One cannot stop to consider the patient from the neurologic standpoint; she must be considered from the surgical standpoint exclusively. I recall a young woman of 20, who had both ovaries removed at the age of 18, and every 20 or 30 days she had the most distressing symptoms. The urine output was as low as 6 ounces for the 24 hours, and the girl was almost blind. There was at no time any condition like nephritis. Except for the reduced quantity, the urine was entirely negative, so far as any involvement of the kidneys was concerned. I could not regard the case as anything other than a toxemia. Relative to these end-results, I have consulted many gynecologists, but they were averse to saying anything. For this especial case, I suggested ovarian transplantation, which was declined. Later the uterus was removed and the woman recovered. I believe that when it is necessary to remove both ovaries, it is well to take out the uterus at the same time. Undoubtedly, there is an ovarian secretion, but I do not see how reflex irritation from the uterus could bring about such a mental condition as was present in this patient.

Dr. L. F. Schmauss, Alexandria, Ind.: One will more often be disappointed in doing conservative surgery than in doing radical surgery. It all depends on what we mean by so-called radical or conservative surgery. Some men are said to be radical when they remove everything that is diseased. That is not radical; it is simply a thorough and complete, a conservative operation, and these are the operations which give the best results, so far as the patients are concerned. It would be well if all cases would turn out as Dr. McRae has reported, but a surgeon must expect to be frequently disappointed. Many patients, if not completely relieved at the first operation, will not submit to a second, and will continue a life of chronic invalidism. Therefore, one can err as much on the side of "conservatism" as on the side of "radicalism." While examining ovaries and tubes before deciding what to do, the physician must be careful how he handles these organs, in order to avoid irritating them, causing the lighting up of old inflammation, cyst formation, etc.

Dr. John C. Murphy, St. Louis: This question of conservative surgery in the pelvis requires a broader and more varied experience on the part of the surgeon than does any other kind of surgery. If the surgeon is confronted with a condition which admits of no delay, it is important that he make up his mind quickly. In dealing with pelvic lesions, speaking from the standpoint of the gynecologist, I frequently see cases in which so-called conservative surgery has been done, and in which the work has been very incomplete, so that the patients have had to be subjected to unnecessary second operations. When the abdomen is once opened, no matter for what condition, the surgeon should have a sufficient knowledge of pathology to recognize what should be done. Unfortunately, however, some men have limited mentality, although possessed of some mechanical ingenuity. They take out ovaries and tubes, and frequently leave an infected uterus behind. And they think they are doing conservative surgery. I have had occasion to see numerous operations performed that were technically perfect, but the operator seemed to lack the training of the pathologist. I have seen surgeons operate on clinic patients whom they had not seen up to the time of their coming to the table. Someone else made the diagnosis, and asked the surgeon to operate for a certain condition. This certainly is to the detriment of the patient and not to the credit of the surgeon. Sometimes it is conservative to be radical. We must learn to differentiate between these conditions. There are thousands of women who are suffering from the results of incomplete surgery in the pelvis, which deters other sufferers from seeking the relief they might otherwise obtain. The surgeon should not so readily accept the sometimes incomplete diagnosis of his medical colleague, but should combine the science of the diagnostician with the art of the operator. The only conservatism worthy of consideration is that which puts the patient in the best possible condition to enjoy the pleasure of living.

Dr. Floyd W. McRae, Atlanta, Ga.: I agree with Dr. Baldy, that surgeons, as well as gynecologists, ought to be diagnosticians. I do not believe that there is any real antagonism between surgeons and gynecologists. There is not a good gynecologist who is not also a good surgeon, and any good surgeon is capable of doing most gynecologic operations. I do not believe that Dr. Baldy, or any other surgeon of experience, operates in these medical cases to which I referred. One of the principal points in my paper was that we must make a diagnosis. Dr. Murphy referred to one point of which I spoke, and that is operating on patients without making a previous examination. We should not go into these cases blindly, because that is when and where we make mistakes. Without doubt, many operations are done radically when conservative procedures would have been better. Often infections in the pelvis have practically jugulated themselves. We can do conservative surgery in these infective cases, and we can do much to preserve to the woman her womanliness. I have yet to see a young woman, who has had tubes, ovaries and uterus removed, and who is satisfied with her condition after five or six years. The younger the woman the more important it is for us to conserve these organs, or even to transplant at least a portion of an ovary into the uterus, saving enough of the ovary to prevent an artificial menopause. False deductions are made from improper diagnoses, improper appreciation of pathology, and lack of care in doing this work. I would rather operate twice or thrice on one patient and preserve her womanliness than do a complete operation and make of her one of those hapless individuals described in my paper.

A New Method for the Differentiation of Bacterial Species.—In a second report on the influence of bacterial endotoxins on phagocytosis (*Nature*, Nov. 24, 1910), L. S. Dudgeon, P. N. Panton and H. A. F. Wilson say they have failed to demonstrate in any of their experiments any action of the endotoxic substances on the leukocytes; experiments of allowing bacteria to be exposed to the action of specific endotoxic substances furnished similar results. They confirm those published in their first communication that the phagocytic result was dependent on the interaction of endotoxin of serum. They have found, in the case of normal serum, that the amount of phagocytosis permitted when bacteria and endotoxin interact is not related to the amount of hemolytic complement present. The action of the endotoxin seems to be specific even with such closely related organisms as the typhoid and paratyphoid types and they suggest that this method may be employed for the differentiation of bacterial species. The amount of endotoxin has been shown to be strongly hemostabile.

THE DIAGNOSIS AND TREATMENT OF CHRONIC INTESTINAL INDIGESTION IN CHILDREN *

SAMUEL M. HAMILL, M.D.
AND
KENNETH D. BLACKFAN, M.D.
PHILADELPHIA

This paper relates exclusively to chronic intestinal indigestion in children beyond the second year of life. It is not our intention to go into a detailed description of the condition, but rather to point out certain of its features which are of special interest and importance. Its etiology, as is well known, includes bad conditions of hygiene, food of poor quality, improperly prepared foods, overeating, eating at improper intervals, too rapid eating, insufficient mastication, defective teeth, exercise too soon after eating, fatigue, insufficient hours of rest, educational over-work, nervous influences, etc. Any and all of these conditions may result in disturbances of the gastro-intestinal tract in children who are primarily entirely normal and eventually bring about the form of disturbed digestion under consideration.

In addition to the causes mentioned it must be borne in mind that many children, either as a result of inheritance, previous acute illness or environment, suffer from constitutional debility which predisposes them to diseases of the gastro-intestinal tract.

While chronic disorders of the intestinal tract may be secondary to disturbances of the gastric digestion or the product of recurring attacks of acute gastro-intestinal disturbance, one must not lose sight of the fact that in a large percentage, if not the majority of cases, the condition is primary, and it is in this group of cases, which eventually result in the more pronounced types, that the earlier symptoms are frequently overlooked.

In the routine examination of the stools of apparently normal children, foul-smelling feces, which may or may not contain particles of undigested food, are a common finding. With these results as a guide a closer examination of the donor will often result in the establishment of other symptoms of disturbance of the intestinal digestion of which the child has never complained and which have passed entirely unrecognized.

Not infrequently, however, this condition of the stools is the only evidence one can discover, and it may continue indefinitely as the only symptom. It is well, therefore, to remember that chronic indigestion may and usually does persist for many weeks or months in a mild form, and at this stage its recognition is especially important, as therapeutic measures are much more promptly effective when applied early than in the later course of the disease.

The only satisfactory way of making the diagnosis of these milder forms, as has been indicated by the foregoing statements, is by an examination of the stools. Questioning the parents or child as to the regularity in movement of the bowels or condition of the stools is fruitless. In the first place, comparatively few parents give answers based on observation. They may insist on the child going to the toilet each day and the child may respond and have a movement, which is reported to the parent as satisfactory; but it is manifestly impossible that the child should know the color, odor and general appearance of a normal stool—as a matter of fact, there are few adults who do—consequently the statements of the parent or child cannot be accepted as indicating the actual conditions.

Quite recently one of us referred to a fellow-practitioner, a highly intelligent adult, who was suffering from insomnia and an associated group of symptoms which are commonly included under hypochondriasis or neurasthenia. The patient stated that he had been having a normal stool each day immediately after breakfast since childhood. The stool, which was sent to the laboratory for examination, was dark-green in color; macroscopically it contained undigested vegetable and meat fiber and the odor was indescribably bad. When the patient was told the character of the stool he remarked that he knew the odor was bad, but he supposed, since this had been the odor of his stools for many years, that it was normal. This serves as an illustration of the unreliability of the patients' statements as to the character of the stools.

It is manifest, therefore, that if satisfactory data are to be obtained the stools must be examined by the physician, and not on one occasion only, but several times at intervals of some days, since it is not uncommon for the child to occasionally have fairly normal stools, even in long-standing cases.

In order to appreciate one's findings it is necessary to have some idea of the appearance of normal feces. While the consistence and form may vary within certain limits, according to the character of the diet, we consider a stool to be normal when it is of faintly alkaline, amphoteric or neutral reaction, well-formed, light or medium brown in color, and has only a slight and not a noteworthy offensive fecal odor. It should show no evidences of fermentation and only slight traces of mucus should be present. Microscopically a normal stool shows, besides vegetable cells, poorly striated muscle fibers, leukocytes, bacteria, etc., no starch granules, and, if any, only a few neutral fat globules, soaps or crystals.

In intestinal indigestion the stools show evidences of abnormality depending on the particular element in the diet which is being less satisfactorily disposed of. Macroscopically the stool may be unformed or only partly formed, whitish, light brown, greenish or dark brown in color, and show an increase in offensiveness referable and in proportion to the increase of the putrefactive processes. It may be semi-solid, soft or mushy, or, on the other hand, hard and dry. It may contain undigested particles of muscle or vegetable tissue, show varying degrees of fermentation and varying amounts of mucus. Microscopically the stool may show large numbers of vegetable cells, fairly well-striated muscle fibers, starch granules, and, in the cases due to disturbances of the fat digestion, excessive quantities of neutral fat, soaps or crystals.

In the cases with marked abdominal symptoms the stools may show an exaggeration of the foregoing picture. The consistence may be very loose, or watery, and the fermentation marked enough to produce almost constant bubbling on the surface of the stool and the odor offensive in the extreme.

It is well to remember one point that has been referred to, namely, that the stools are often continuously offensive without containing particles of undigested food. This condition may not necessarily indicate a disturbance of the digestion of such character as we are considering, but may be the product of practically any

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

condition which will bring about a general lowering of nutrition, such as chronic infection through the lymphatic tissues of the nasopharynx or the faucial tonsils. In consequence there evidently occurs in the intestinal tract a diminution in resistance to the multiplication of the putrefactive bacteria without any material interference with its digestive function.

A careful study of the urine is of value in directing one's attention to disturbed intestinal digestion when the stools show no evidences of abnormality. The general characteristics of the urine as a rule show no changes, and, although it has been stated that there is an increase in albumin, this has only occasionally been true of the cases observed by us. We can conceive that certain changes might be produced in the functionating power of the kidneys, especially in the long-standing cases, which would result in an increased elimination of albumin. More commonly indican, phenol and urobilinogen are present in amounts depending on the degree of the intestinal putrefaction. These products may appear either alone or in combination, and, though usually associated with disturbances of the protein digestion, are sometimes present when the putrefactive process depends on other causes.

The manifestations aside from the stools may vary from practically no subjective symptoms to the most extreme clinical picture that one can depict. The symptoms are by no means restricted to the intestinal tract; in fact, the absence or mildness of the abdominal symptoms may be so striking as entirely to obscure the actual seat of the primary disturbance. The cardiovascular and nervous systems sometimes furnish the bulk of the symptoms; coldness and blueness of the extremities, fits of pallor, even amounting to syncope at times, palpitation and irregularity of the heart's action are common symptoms on the part of the circulation, and, together with the wasting, which in the long-standing cases is constant, there may be considerable anemia, which is usually, however, more apparent than real.

On the part of the nervous system there is no limit to the manifestations, and it is to these that we wish particularly to draw attention. The most common nervous phenomena are restless sleep, muttering during sleep, night terrors and sometimes insomnia. There is a general condition of restlessness and irritability and inability to concentration of effort, especially mental effort. These children are apt to do badly in their studies. They frequently drift into a clinical picture which in the adult would be defined as neurasthenia, and after this condition of nervous unbalance has been well developed convulsive seizures sometimes occur.

Not once but many times we have had these cases come under our observation, with the diagnosis of epilepsy and a hopeless prognosis as to recovery, and it is this fact more than any other which has stimulated us to present this paper, because we believe that the convulsive seizures occurring in this condition are frequently, if neglected, the beginning point of what later develops into so-called epilepsy. It has been our experience that in these neglected cases the history has shown a tendency to increasing frequency of the convulsive seizures; in other words, each convulsive seizure has rendered the nervous system more unstable and, therefore, more susceptible to insults from the toxic products which are constantly forming. The result is that the habit of fits becomes well established and eventually the resistance is so slight that the subject is to all intents and purposes an epileptic.

The relationship between chronic disturbances of the intestinal digestion and convulsive seizures cannot be too strongly emphasized. It is almost criminal to assume that, because any child has had a series of convulsive seizures lasting over a period of months or even a year, it is necessarily epileptic. Such an assumption is a most liberal contribution to the production of epilepsy.

The proper attitude to take toward a child with such a history is that there is a tangible cause for the attacks, which must be searched for through every possible avenue until it is determined and eradicated. The frequency with which it can be traced to these chronic conditions of the intestinal tract will be surprising and enlightening.

The fact that certain children suffering from chronic disturbances of the intestinal tract show more marked nervous phenomena than others is difficult to explain. The relationship of these symptoms to inherited weakness of the nervous system or to inherited tendencies which result in nervous instability is very commonly emphasized. We find certain writers describing under the headings of neurasthenia, nervousness, lithemia, chronic gastro-intestinal disturbances, chronic intestinal indigestion, constipation, etc., practically the same varied group of nervous symptoms. While neurasthenia is not accepted by some pediatrists as occurring in early life, it is by others, and, as to etiology, it is usually defined as hereditary and acquired. We are probably all willing to admit that we are not born into the world endowed with the same amount of nervous resistance. Unquestionably each individual differs from others in this respect, and some have very little nervous resistance. These latter are the ones defined as the hereditary neurasthenics. Their nervous force is so limited that the slightest variation from the normal routine of life results in the production of nervous symptoms; indeed, it is said that these may occur without an exciting cause. These cases are described by some pediatrists as of easy recognition even in early infancy through the occurrence of such reflex phenomena as abnormal tendency to fright (as starting on the occurrence of any sudden noise), abnormally light sleep, continuous crying day and night, etc.

Acquired neurasthenia is usually attributed to overstrain, either mental or physical, and to certain emotions. These latter causes are rarely active in children and, therefore, one must assume that in early life the large majority of instances of neurasthenia are manifestations of a hereditary weakness unless certain other factors, not active in adult life, are capable of producing neurasthenia in children.

It seems to us that this group of nervous symptoms which is common to so many disorders in early life should be classified either as neurasthenia caused by the conditions with which they are associated or that the term "neurasthenia" should be restricted to an exceedingly small group of cases or eliminated entirely from the category of diseases of child life. We incline to this latter view because we believe that the instances in which these nervous manifestations exist, apart from all exciting causes, are practically unknown. They may be dependent on any one of a number, such as bad environment, adenoids and enlarged tonsils, defects in vision, and the chronic disturbances of the gastro-intestinal tract. Unquestionably this latter group is more largely responsible for the nervous phenomena of children than any of the others, and this is especially true of chronic intestinal indigestion. In certain children the nervous system may be especially susceptible because of hereditary deficiency; in others the prolonged action of toxic products on the nerve centers results in an acquired susceptibility with the production of the same phenomena.

In either event the fact remains that in chronic intestinal indigestion there is a large group of nervous symptoms which are dependent on the toxic substances, which are absorbed or retained in consequence of the abnormal conditions of the intestinal tract—a fact which we daily demonstrate by bringing them under complete control by correcting the intestinal condition.

The important point to bear in mind is this causative relationship, since there is grave danger of accepting the nervous symptoms as the disease without endeavoring to determine the primary condition and relieving it. Probably all of us have been inclined to look on this condition of nervousness associated with chronic intestinal indigestion in early life as the internist has looked on neurasthenia in the adult, viz., as often more or less hopeless from the therapeutic standpoint. This attitude has made the handling of these cases difficult.

We have shown a tendency to neglect them. The bad results of such neglect are far-reaching. The longer the condition lasts the more numerous and fixed the symptoms become. These children often pass out of childhood into early youth and on up to adult life, becoming more fixed in their ill health and correspondingly more neglected as the treatment of their condition becomes more difficult. They swell the number of so-called cranks, hypochondriacs, neurasthenics and hysterics among adults, a large percentage of whom could have been given comfortable, useful lives if the true nature of their condition had been recognized in childhood.

Aside from the symptoms referred to these cases of chronic intestinal indigestion sometimes manifest another group of symptoms which may be misleading from the standpoint of diagnosis.

Distention of the abdomen does not develop in all instances, but in the cases in which the nutrition of the muscles suffers the abdomen may be greatly distended. The thinning out of the abdominal muscles lessens the support to the abdominal contents; this lack of support, together with the weakening of the intestinal wall and the putrefactive processes within the intestine, brings about a ballooning of the abdomen which may become extreme; when vomiting of toxic origin, which may persist for some days, is added to these symptoms the clinical picture of tuberculous peritonitis is strongly suggested and sometimes eliminated with considerable difficulty, especially the fibrous form. The only satisfactory evidence on which peritonitis can be excluded is the history of the case, continuous observation over a period of weeks, the absence of the characteristic doughy or infiltrated feeling of tuberculous peritonitis, and the absence of masses within the abdomen, signs which may, however, be entirely lacking.

There is one other symptom to which we wish to call attention, and that is a peculiar form of dyspnea which we have somewhere seen aptly described as "sighing respiration." This symptom is most marked after meals and especially after the evening meal or when food is taken immediately after severe exercise. It is associated with a feeling of epigastric distress or pressure and consists of inability to get a sensation of satisfaction from respiratory effort. It is usually associated with increased distention of the abdomen, especially the distention of rather sudden origin. The child will take a full deep inspiration, which is followed by a sighing expiration. It sometimes becomes almost continuous for a period of days and in older children we have seen it produce considerable alarm. Exercise will sometimes increase it, but generally it lessens abruptly or entirely disappears when the attention is distracted by occupation. On what this symptom depends we are uncertain. Whilst usually associated with increase in the abdominal distention, the latter rarely seems sufficient to mechanically interfere with the proper function of the intrathoracic organs. It would seem to be more properly attributable to some toxic effect on the centers of respiration and probably always exaggerated by psychic influences.

Edsall has suggested that since in gastro-intestinal conditions marked acidosis is not uncommon it is entirely possible that a "subacidosis" may overstimulate the respiratory centers sufficiently to produce this symptom.

Haldane and Priestly have shown that carbon dioxid is the normal stimulant to the respiratory center. It has also been shown that other acids may have the same effect. Therefore it is not a lack of oxygen but the presence of carbon dioxid and other acids that produces respiratory effort.

Beddard, Pembrey and Spriggs have shown that in the coma of diabetics carbon dioxid tension may not be increased and that the blood can still absorb carbon dioxid freely, but that slightly excessive amounts of carbon dioxid in the respired air cause great excess of dyspnea.

Since this dyspnea is very often controlled by alkalies, and since acid intoxication is known to exist in diabetic coma, the authors referred to conclude that the organic acids produce the Kussmaul breathing by acting as respiratory stimulants.

In the light of these conclusions, and because of the striking similarity between the sighing respiration of intestinal indigestion and the Kussmaul breathing, the suggestion of Edsall would seem to provide the correct explanation.

TREATMENT

Coming now to the treatment of chronic intestinal indigestion, we would say that it divides itself into the following heads:

1. Absolute control of the patient—which means the full cooperation of the mother and nurse.
2. Hygienic treatment.
3. Dietetic treatment.
4. Medicinal treatment.

Unless one has the full assistance of the caretakers in carrying out measures of treatment, failure is a foregone conclusion. The first step in the treatment, therefore, consists in securing such cooperation. This can usually be done by a full explanation of the nature of the disease, its chronicity, the dire results which will inevitably follow neglect of the condition, by placing of a large share of the responsibility of treatment on the mother or nurse, where it rightly belongs, by the promise of cure if they cooperate, and by making them understand in the beginning that the treatment must be continued not over days or weeks, but months, and that drugs will be but a small factor in accomplishing results.

If the confidence of the attendants is thus obtained, the most important feature in the treatment is accomplished. In the children of the poor and ignorant, seen in the hospital clinics, one can obtain better results—in fact, one might say that the only way in which one can get thoroughly satisfactory results is—by placing them in the wards of the hospital for several weeks, as the conditions necessary for treatment cannot be secured in their homes.

Patients of this class unfortunately will only too often relapse after they have returned to their home environment. Much can be accomplished with such patients, however, by following them up in their homes through the medium of social workers or visiting nurses.

Hygienic measures are very important. Life in the open air, for its stimulating effect on the circulation and general toning effect, must be insisted on, and the sleeping-rooms must be cool and ventilated through wide-open windows. Properly regulated exercise is important, but this should be largely in the open air and always short of fatigue. Children must be required to eat slowly and masticate their food thoroughly, the common habit of bolting food to get away to school or to games being one of the causes of this condition. A period of rest should intervene between the taking of food and indulgence in active exercise. Very little, if any, physical exercise should be permitted after the evening meal. Long hours of sleep obtained by early retiring are essential.

The skin of these children is usually dry and inactive. It must be stimulated to do its work as an organ of elimination by the use of daily baths, rubbing, and inunctions, preferably with olive oil.

The kidneys must be kept active by the free use of water, which will also contribute to the lessening of constipation when it exists. Regularity in the evacuation of the bowels is necessary, especially in the presence of constipation. The child must be guarded against too close consideration of its symptoms, a result which is often brought about by undue anxiety on the part of the parents. Its environments must be cheerful and free of gloom. It must be relieved from all occupations which are depressing, especially from overwork in school.

Defective conditions in the teeth must be corrected and disturbing adenoids or tonsils removed, but only after the treatment has been continued long enough to bring about some improvement in the general health, and then by quick operations.

The nature of the diet depends to a large extent on the character of the indigestion. This can only be determined, as has been previously pointed out, by a careful study of the stools. If any one element of the diet has been badly handled, it must be withdrawn from the dietary, temporarily at least. Generally speaking such patients will do better in the beginning on a very much restricted diet, restricted even beyond the caloric needs in the individual case. One of the commonest errors in the treatment is the tendency to overcome the poor nutrition by full feeding. Obviously such a course is comparable only to adding fuel to the flames. These children are already the victims of too much food, and what their digestions need is not increased work, but rest. This can usually be most satisfactorily accomplished by the administration of a milk diet in some form. Where fats are badly handled, it is sometimes necessary to use diluted or even fat-free milks, and in some cases properly prepared buttermilk is useful. The milk diet should be continued until the stools give evidence of satisfactory digestion, after which the diet may be gradually extended, studying the stools the while and bearing in mind the elements in the food which have been poorly disposed of.

Usually the diet can be gradually advanced until a general well-rounded diet equal to the needs of the individual child has been reached. The heaviest meal should be given in the middle of the day, and the evening meal should be very light, as these children rarely sleep quietly on a full stomach.

It seems almost needless to say that all foods of recognized indigestibility should be permanently excluded and that the pernicious habit of eating between meals should be forbidden. Tea and coffee and other unnecessary and disturbing substances must follow the same course.

The use of drugs in this condition represents the least important part of the treatment. There is no specific, and, therefore, whatever drugs are given must be directed to the relief of certain symptoms.

We have used the so-called intestinal antiseptics for the control of putrefactive processes, but with entirely negative results. In the beginning of treatment and occasionally thereafter, a course of calomel followed by colonic irrigation will do much to relieve this feature of the disease. The intestinal washings seem especially effective in the cases with loose, watery, foul-smelling stools.

For the frequently associated constipation, one need rarely resort to the use of drugs. The free use of water on rising, evacuation of the bowels immediately after the morning meal, together with properly applied abdominal massage, and later the free use of green vegetables and laxative fruits, will invariably control this symptom.

As a temporary measure, we prefer olive oil enemas and non-irritant suppositories to laxative drugs. In the emaciated patients with marked abdominal distention, temporary mechanical support to the abdominal wall, together with muscle exercises directed to improvement in the tone of the abdominal muscles will contribute to the relief of constipation.

The bitter tonics, which are given more for their toning effect on the gastric mucosa than for their general effect, are the only tonics which are indicated. In short, if the conditions which are active in the causation of the disease can be controlled in the manner indicated under the preceding headings, the clinical picture will usually clear up without the necessity of drugs.

1822 Spruce Street.

ABSTRACT OF DISCUSSION

Dr. H. L. Coit, Newark, N. J.: I have seen a number of cases that correspond to this clinical picture, and it is well to remember that many cases of so-called epilepsy are amenable to treatment. Most of the cases I have seen have been referred to me by physicians who thought they had epilepsy to deal with. Physicians are too ready to use medicine in treatment of intestinal indigestion in children. without proper attention to the diet. I think we should study these cases carefully and question the mother closely, in order to determine the dietetic errors. In the treatment, an important part is the correction of the diet. It may be that milk is used with red meats, or milk is used at breakfast with fruit and sugar. In addition we find over-feeding the rule, with the consequent putrefactive intestinal decomposition. In these cases there are restlessness, sleeplessness, indicanuria, fits of uncontrollable anger and foul-smelling stools. We cannot remove the results of putrefaction with carbohydrate diet alone, nor with calomel, or castor oil, but I think that we can do it by the use of bichlorid of mercury. Corrosive sublimate was abandoned by the surgeon because it became an albuminate which was insoluble, and the same is true when given by the mouth, but when it is given with hydrochloric acid it probably reaches the intestine, although it may there be changed into some other salt which finally alters the malodorous character of the intestinal contents. It should be given with the tincture of the chlorid of iron and with considerable glycerin an hour before the ingestion of food in small quantities.

Dr. Charles Gilmore Kerley, New York: I agree with everything Dr. Hamill has said, but I want to emphasize one point that I think he did not emphasize sufficiently, and that is, the matter of rest in the type of child he discusses. All of the lower animals lie down and sleep or take a rest after a full meal if they have an opportunity, and then digestive function is carried on better. When an animal has to work after a full meal, the digestion and assimilation are not so good. This has been demonstrated time and again. We all know how much exercise is taken by children, especially children of school age. The amount of energy expended in their work is tremendous, and the energy that is expended *in play cannot be utilized in the* digestion of food. When we have wasted energy in a child we have invariably indigestion, malassimilation, malnutrition and neurasthenia. Keep these children in bed in the morning, and let them have their breakfast in bed and give them a modified rest cure. Then let them run about and play like normal children until luncheon in the middle of the day. Then have them rest again for an hour and a half and then allow them to run about until 6 p. m., when their evening meal is taken and then to bed. In that way the child gets all of the rest required and he conserves his vitality for the processes of assimilation and growth. If we let these children lead a child's life and see that they get sufficient rest, they will not get into the condition described by Dr. Hamill. One of our greatest errors in the management of young children is in permitting the extraordinary amount of work they do from morning until evening. If you don't believe that, take one of your own children and weigh him, and then give him this rest and weigh him at the end of a month, and you will find that the child will gain a pound or more.

Dr. L. T. Royster, Norfolk, Va.: Has Dr. Hamill made any observation at all in the matter of temperature during the convulsive seizures in the class of cases he mentions? Does he consider the temperature, either positive or negative, in any way suggestive of the diagnosis between that condition and epilepsy? I have asked a number of neurologists in this country that question and none of them seems to have thought of it to the extent of making an observation.

Dr. H. M. McClanahan, Omaha: The valuable thought in this paper to me was the possibility of *intestinal indigestion* and consequent toxemia leading to epilepsy. I have in mind a little girl who had repeated convulsions as often as once a week. She had chronic intestinal indigestion of the mucous type. After following out the course of treatment suggested by Dr. Hamill that child has absolutely recovered and more than six months have elapsed since a convulsion occurred. I am thoroughly convinced that, though the trouble was not true epilepsy, it was leading to epilepsy, and I am convinced that the convulsions were due to some toxins in the blood from the intestinal putrefaction. I believe more than most of you in the value of drugs, and I hope that I shall never become a therapeutic nihilist any more than I am a social nihilist, but I think that when the mother is given a drug to administer in these cases she is far more apt to carry out your treatment than if you depend absolutely on hygienic treatment. In the presence of constipation, especially the mucous type, the use of phosphate of soda is of value although its value is not great compared with that of rest and a correction of the diet.

Dr. E. E. Graham, Philadelphia: In considering the nervous symptoms Dr. Hamill speaks of, we should not lose sight of the fact that a convulsive seizure in a child is brought about by an entirely different cause from a convulsive seizure in an adult. In children the convulsion is commonly of reflex origin, while in the adult it is commonly the result of some organic disease of the nervous system. This only adds force to the statement that chronic gastro-intestinal disease may originate and produce epilepsy in the adult. The probability of convulsions due to brain injury in an adult is very remote, while it is very common in children. For many years I have made a study of the cases in which convulsions developed in infancy, and that study has proved to my mind conclusively that the young child who has a convulsion is very commonly the one who later develops epilepsy, and that probably the *convulsion*, due to gastro-intestinal intoxication, is the origin of the late epilepsy. In other words, a certain amount of damage to a child's nervous system predisposes it to epilepsy. Any condition that is chronic for months or years and predisposes the child to convulsions certainly establishes a future condition that will predispose that individual to epilepsy. This paper is valuable because it deals with a *condition* with which we are all brought into contact, though it is a type of trouble that the large majority of us are apt to overlook.

Dr. John Lovett Morse, Boston: I merely wish to emphasize the importance of regulation of the diet in the treatment of these cases. The only way in which the diet can be accurately regulated is by having the mother keep an exact account of what the child eats both as to quantity and quality and by repeated examination of the stools. In this way only can we determine exactly what the cause of the condition is. The only feasible way of disinfecting the intestine is by changing the bacterial flora, and this can be done only by changing the food. I want especially to emphasize the value of the carbohydrates in changing the flora in these conditions. Changing the intestinal contents by the carbohydrates changes the flora, inhibits the growth of the organisms which thrive on proteids, and hence prevents the formation and absorption of the products of the decomposition of proteids. When Dr. Coit spoke of protecting the bichlorid by hydrochloric acid, I wondered how many inches down the intestinal tract it would go before it was neutralized.

Dr. Fritz B. Talbot, Boston: There is a general impression that it is a very difficult procedure to make an examination *of the stools. From three to five minutes are required to* make the examination and it gives important information concerning the digestion of fat, starches and meat. I have been impressed by the fact that an excess of meat and starches is relatively uncommon and that an excess of fat is common in these cases of intestinal indigestion. The reason for this is that fat is the component of the food, which the parents are more likely to give in excess to a child who is run down.

Dr. Samuel M. Hamill, Philadelphia: Dr. Kerley is probably right in believing that I did not sufficiently emphasize the importance of rest in the treatment of chronic intestinal indigestion. He believes in prolonging the night's rest by giving these children their breakfast in bed. I am inclined to believe that in these cases many hours of consecutive rest result in the accumulation of toxic products which are very depressing in their effect. It is my custom, therefore, to have these children get up at a comparatively *early hour, and, in order* to secure a satisfactory total rest for the twenty-four hours, to have them rest at later periods of the day. I think that rest is so important that I sometimes have these children separated from other children by sending them to the country in charge of a nurse, where they *can* be under better control and where a quiet restful life is possible. I have not studied the temperature curve in the cases having convulsions, but I do not believe it would prove of value in the differential diagnosis from epilepsy.

As to Dr. Graham's remarks, I am perfectly willing to *admit that* children are more susceptible to reflex influences than are adults, but I do not believe the convulsive seizures in these cases are of a purely reflex nature. They are of toxic origin, as are the other symptoms.

I do not want Dr. McClanahan to believe that I am a *therapeutic nihilist.* I give drugs to these patients but it is exceedingly important to emphasize the fact that drugs are overemployed and that they are frequently given without the slightest indication. I realize that it is desirable to console the mother by giving some medicine to the child, and I think we *can do this* honestly by prescribing some valuable drug, but we must make her realize the limitations of drugs, for unless we emphasize the necessity for general *hygienic* treatment the mother will neglect this and pin her faith to *the drugs.*

Dr. Morse spoke of the value of getting a record from the mother of the exact dietary of the child. I never treat a child without doing this, and I think it is exceedingly important. I secure not only a list of the various foods administered, but also a statement of the amounts of each food. The examination of the stools, as has been suggested by Dr. Talbot, is not a difficult procedure, and one can gather much valuable information from the macroscopic study alone. The microscopic examination is important, but not so much so as the macroscopic. The sooner we realize that the examination of the stools is an easy procedure, the sooner we shall employ it as a routine measure.

NITROUS OXID AND OXYGEN ANESTHESIA *

WILLIAM D. HAGGARD, M.D.
NASHVILLE, TENN.

The advances in the use and perfection of nitrous oxid anesthesia since the report of the Anesthesia Commission on this subject, at the meeting of 1908, seem to consist of the following:

1. The employment of this agent, with modifications, as the routine anesthetic in several of the large clinics of this country.
2. The demonstration clinically and experimentally of the advantages of nitrogen oxid and oxygen over ether, in the prevention of shock, the conservation of immunity and its value in the case of the handicapped patient (Crile).
3. The establishment of rebreathing of nitrous oxid and oxygen for two or three minute periods, as harmless and beneficial, with the great reduction in cost of this anesthetic (Gatch).

It has already been shown that nitrous oxid is the safest of all anesthetics and the most pleasant to take; that it requires the shortest time for induction; that there is almost immediate recovery after its discontinuance, and that it has no bad after-effects. There is no stage of excitement, and excitement is absent when the patient returns to consciousness. Dentists, who have used it in short administrations for many years, state that literally millions of administrations have yielded an infinitesimal number of deaths.

It is not absolutely free from danger, however. Death can occur from its continuous administration, without admission of air or oxygen in from two to four minutes. In overdosage, death is caused by asphyxiation and cardiac inhibition. In the fatal animal experiments, sudden arrest of the heart in overdistention was observed. The danger-signals with this anesthetic are:

1. Deep and persistent cyanosis.
2. Depression and slowing of the pulse.
3. Vomiting.

Cyanosis is the first indication of trouble, and gives startling warning of impending danger. Discontinuance of gas and giving of oxygen, which should be always at hand, uniformly and promptly dissipate all danger.

Crile has shown in the physiologic laboratory that animals under nitrous oxid withstand shock-producing trauma much better than under ether. The resistance of animals rendered pathologic from infections, hemorrhage, and hyperthyroidism, likewise, was strikingly better under nitrous oxid than under ether. These laboratory observations were corroborated by the histologic examination of the primitive ganglion cells of the central nervous system. Crile's recent investigations in cytolysis show that there is decidedly more destruction of chromatin after ether than after nitrous oxid. Again, there is no lowering of the phagocytic power after nitrous oxid, as after ether. Nitrous oxid does not reduce hemoglobin or cause any permanent blood change. There is no acetone or indicanuria as a result. Postanesthetic complications are absent.

Although oxygen was used by Andrews with nitrous oxid as early as 1868, some of the later apparatus provided for the admixture of air. Bevan employs this gas and air mixture with success, and I have used it in a series of over 100 cases. This mixture, however, does not provide such smooth anesthesia as does the mixture with oxygen. On account of the large atmospheric content of nitrogen, if enough air is used to do away with cyanosis entirely, it so dilutes the mixture that complete anesthesia is interfered with. While cyanosis is not desirable and can be prevented by the addition of oxygen, yet it should be understood that the cyanosis is not nearly so dangerous as that cyanosis produced by ether or chloroform—a cyanosis due to cardiac and respiratory depression.

It seems to have been established by Gatch that rebreathing nitrous oxid and oxygen in periods of two minutes is not only perfectly safe, but helpful to respiration, circulation and blood-pressure. Moreover, rebreathing reduces the expense greatly, which was partly responsible for the somewhat restricted use of this agent. Rebreathing seems to be more satisfactory than the continuous administration of the gas. The respirations are deeper and fuller, and the pulse is slowed by the therapeutic excess of carbon dioxid stimulating the center of cardio-inhibition. The temperature is slightly raised. The argument for rebreathing is that carbon dioxid under 4 per cent. concentration is non-toxic; that in normal and somewhat increased amounts in the blood it is the normal stimulus to the venous wall; that the abolition of venous tonus and not arterial is the primary cause of failure of circulation in shock. Carbon dioxid stimulates the cardio-inhibitory, vasomotor and respiratory centers, and an increase such as is afforded by rebreathing during gas and oxygen raises the blood-pressure and is thus an easily available preventive of shock. The loss of body heat by expired air is conserved by rebreathing and artificial warming of the gases is rendered unnecesary.

The apparatus of Gatch providing for rebreathing is extremely simple, portable and inexpensive. It has a rubber sleeve that fits snugly and conveniently over the face-piece, preventing leakage of gases and the ingress of air which checks the anesthesia. The patient can be given air or gas, with or without oxygen, and made to breathe the mixed gases to and from the bag. Even a little air allowed to mix the gases spoils the anesthesia. The apparatus has an attachment permitting ether to be added when needed for short periods, all without removal of the mask, until the anesthesia is to be permanently withdrawn. It is a very powerful etherizing device when needed.

It is not necessary to attempt to give any arbitrary percentage of oxygen. Just enough to dispel the cyanosis is the aim and, roughly speaking, a puff of oxygen in each bag of nitrous oxid that is to be rebreathed is sufficient. Keep the patient pink, is the rule. If the color cannot be kept good, it is better to give ether by the open method.

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* Approved by the Committee on Anesthesia of the American Medical Association.

Not all patients, notably not the very robust and alcoholics, can be sufficiently relaxed without disagreeable cyanosis. In these, ether given for three or four minutes in the mask or by the open method, will usually accomplish relaxation and oblivion. The quantity of ether is negligible. When rigidity is overcome the gas may be resumed. A little ether, so small in quantity that the patient is never aware of it, is given in about three-fourths of the abdominal cases at Johns Hopkins Hospital (Gatch). The post-operative discomfort is less with a little ether and no cyanosis than with no ether and prolonged cyanosis. Pronounced cyanosis is apt to be followed by headache.

Teter estimates that a small quantity of ether given in this way will be necessary in about 10 per cent. of the cases. In laparotomies three, five or seven minutes of ether will be required in about 40 per cent. of cases.

Gas and oxygen can be used with impunity where ether is contraindicated, i. e., in kidney disease. Nitrous oxid has also been employed in advanced pulmonary lesions and seems to have caused no mortality. It is particularly helpful in those desperate cases from any cause that urgently demand operation and yet are so risky that the surgeon realizes that ether or chloroform is the added weight which depresses the beam.

The borderline cases in which the operator seriously questions the wisdom of trying to do anything, may have surgical aid extended safely, so far as the anesthetic is concerned, by nitrous oxid and oxygen, but only at the greatest hazard with ether or chloroform. Moreover, the inevitable, though small, anesthetic mortality from pneumonia, anuria, fatty degeneration of the liver, etc., can be be prevented.

The chief class of cases rendering nitrous oxid unsafe is that of heart lesions, whether myocardial or valvular.

Anesthetization with nitrous oxid is incontestably more difficult than ether. It requires special training and expertness to acquire the technic. Crile has had it administered practically as his routine anesthetic in over 1,000 cases. There has been one death six hours afterward which he charges to the anesthetic. With the increased experience acquired by his special anesthetist he feels that this fatality could now be averted.

The danger, therefore, is not so much in the agent as in the administrator, but this is equally true of the other anesthetics. The simple cases should be chosen first.

It is therefore not adaptable for the all-round use of the general practitioner, but will grow greatly in popularity in the highly perfected clinics, in hospitals with expert permanent anesthetists, and with those who specialize in anesthetics. Fortunately most of the major surgery and graver traumas are cared for under these conditions, and thus the desperate chance patient may have this added safeguard and adjuvant to life saving.

Gas and oxygen are not only indicated where the risk is great, but routinely they are a special boon to patients who have been operated on before and who have a more or less justifiable and vigorously expressed dread of the primary "smothering" effects of ether, and the secondary feeling of *mal de mer*.

Nitrous oxid can be safely administered for two or three hours, and at Johns Hopkins Hospital where it has been used routinely on the surgical side in over 1,000 cases, Gatch kept one patient under its influence for five hours without ill effects. It can be given longer with safety than any other anesthetic.

A preliminary dose of morphin gr. 1/4 and atropin gr. 1/150 or half that amount is useful in the majority of cases to assuage the fear of the anesthetic and of the operative ordeal. Anesthesia is induced more easily and proceeds more tranquilly, a smaller quantity is required and the after pain is annulled. No food or drink should be given for at least four hours prior to operation. Do not begin the operation too soon.

Crile gives 1/150 gr. scopolamin or less two hours before operation. It induces the "twilight slumber" and obliterates any fright or even anxiety about the operation. The effect, and with the preliminary dose of morphin followed by the anesthetic lulls the patient into a drowsy somnolence which deprives the entire day of painful recollection.

Nitrous oxid and oxygen anesthesia with the apparatus not permitting rebreathing, costs about $5.00 an hour. With the apparatus of Gatch, obtaining the other benefits of rebreathing, the cost is reduced to $1.00 or $1.50 an hour. This cost may be further greatly reduced by installing, for a few hundred dollars, a permanent plant in the basement of the hospital, for the manufacture of nitrous oxid. It can be piped to the operating-room, thus doing away with the noise made by the escape of the gas under pressure in the cylinders.

Continuous auscultation of the heart by a phonendoscope, as practiced by Cushing and advised by Teter, gives accurate information, and allows both hands of the anesthetist to be employed with the patient and the apparatus.

ANESTHESIA IN TRAUMATIC SURGERY*

GASTON TORRANCE, M.D.

BIRMINGHAM, ALA.

On being asked by the committee to report on anesthesia in traumatic surgery from the Birmingham district, I sent a circular letter to a number of surgeons in this country and abroad, asking them to give their experience and observations in regard to this subject; and below will be found a condensed form of the reports submitted by them.

Professor Eiselsberg writes that in the Vienna clinic they have a special station devoted to traumatic surgical cases. He advises that as small an amount of the anesthetic be used as possible. No morphin or scopolamin should be used in fractures of the skull as there is danger of sudden collapse. Morphin should precede the anesthetic in fractured ribs, thereby avoiding dyspnea. He prefers using Billroth's mixture (chloroform, ether and alcohol) followed by ether where a general anesthetic is to be used. Spinal anesthesia is to be used only where others are contra-indicated. He has never observed a death from the anesthetic. The greatest precautions are to be taken where a general anesthetic is used as traumatized patients are much more sensitive to the effects of anesthetics than other. Where possible the operation should be postponed until the first period of shock has been passed.

Dr. Charles H. Mayo says that he and his colleagues have practically no traumatic cases in their surgery and that they have had very little opportunity to observe the effects of anesthesia in this class of work.

Dr. George W. Crile writes as follows:

> Wherever possible, nitrous oxid oxygen anesthesia is used. I base my preference on the observation that under nitrous oxid anesthesia there is less shock than under ether. That is,

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* Approved by the Committee on Anesthesia of the American Medical Association.

> either nitrous oxid offers a certain protection or ether does a certain amount of harm, I am not prepared to say which it is. In cases of intracranial pressure I should use only local anesthesia In these cases, when anemia of the brain is threatened, a little pressure is often sufficient to cause a fatal degree of anemia Likewise, if in fractures the shock is not deep, I should prefer ether, because there is better muscular relaxation and better adjustment could be made Whenever practical during operations, I cocainize the large nerve trunks. There is no doubt that spinal anesthesia is accompanied by less shock, but I have not as yet adopted it as a general operative anesthesia

Dr. John C Munro, since resigning from the Boston City Hospital six years ago, has seen very little traumatic surgery; prior to that time his experience was very large His observations have been that any general anesthetic, except in short operations, increased the shock of the trauma. Ether acts as a temporary stimulant but, beyond ten or fifteen minutes, is a cause of increased shock. He does not like cocain locally on account of the increase of time required for operation and the increase in psychic depression. Ether is superior to chloroform in chest injuries. A general anesthetic should be used to prevent shock from pain that comes with handling fractures, etc, and it should be used if it will shorten the operative procedures and prevent prolonged exposure of the patient

Mr Rutherford Morison, Newcastle-on-Tyne, holds that the danger of the anesthetic depends more on the skill and care of the anesthetist than any other factor and that other considerations are insignificant He asserts that shock is combated by the anesthetic and especially the open ether method plus oxygen. In any and every case the anesthetic should be preceded by morphin and atropin. With a skilled anesthetist his preference is for chloroform by Vann Harcourt's inhaler for everything, with an unskilled anesthetist ether offers a larger safety margin

Dr. T. C. Witherspoon, of Butte, Mont, treats a large number of traumatic cases from the mines and railroads; he relies entirely on ether as a general anesthetic and eucain and cocain for local use A local anesthetic is always used where it will suffice He has not used spinal anesthesia in this class of cases but thinks it would be more useful and safer than ether. He has never seen a death attributable to the anesthetic either in traumatic or non-traumatic cases

Mr Robert Jones, of Liverpool, says that he has been much interested in this subject. He writes

> About fourteen or fifteen years ago, when I was appointed operating surgeon to the Manchester Ship Canal Works, where we had three hospitals and 20,000 people working, I had a great deal to do with the administration of anesthetics during the condition of grave trauma, and in such cases as double amputation of the leg, or amputation of thigh and arm, where disinfection and operation had to be rapidly done, I found the results very unfortunate, so many apparently never recovering from the anesthesia combined with the shock.
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> I made a good many experiments as to anesthesia administration, and found shock (as evidenced by pulse and temperature) more pronounced after chloroform than after ether, but that the administration of either resulted in a certain degree of shock I also noted that the navvy, who is a very obstinate man in this country, would come in, perhaps with badly crushed legs which required amputation, but which he refused to have amputated To my astonishment, these patients often lived on until sepsis or some other trouble supervened, and some lived on until, weeks or months afterward, operations were allowed One also noticed that even after very trivial operations, patients were sick and generally upset, and I became convinced that, in conditions of grave shock, if one could operate without an anesthetic, the greatest possible advantage would accrue I therefore determined that, in all my big smashes, I would behave as the surgeons used to behave in the days of old and amputate without any anesthetic at all I used to give them plenty of hot water to drink, and, after preliminaries, I amputated as rapidly as I could. The patient hardly ever complained of pain except when the knife went through the skin, and nearly always when the bone was sawn there was a fall in the pulse and a sigh or groan From the time I adopted this line of treatment, my results show astonishing improvement, the mortality became markedly lessened, the patient (instead of sleeping on to eternity) conversed with one immediately the operation was over, and in some instances the pulse gave the impression of having improved By this method I have amputated both legs and an arm in the same patient, and altogether operated in twenty seven cases of grave lesions Unfortunately, the hospital was burned down and my precise records were destroyed, so that I have never been able to publish the results in detail, but have depended on impressions Although I had almost a rebellion on the part of the staff when I started this method of treatment, they all became enthusiastic when the results were appreciated
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> I will give another case in point bearing on the same question My house surgeon from the Southern Hospital telephoned to me one evening, about fifteen years ago, that a man had been badly smashed by being taken round a wheel in a forge The shoulder was evulsed, the pectoral muscle lay outside his chest, the patient was pulseless and the house surgeon said that it was no good coming to see him I went up however, and found the man pallid, with ribs broken and the pulse barely appreciable in the other arm With a pair of scissors I clipped the muscle slowly through, tying every little vessel and taking half an hour or more in trimming up and removing the whole of the upper arm and the house surgeon at the end told me that his pulse was now quite clearly to be felt

Dr John A Wyeth of New York, considers chloroform more dangerous in any and all forms of surgery than ether, ether more dangerous than nitrous oxid, and nitrous oxid combined with oxygen the least dangerous of all general anesthetics He advises a close study of each case before deciding on an anesthetic, and thinks that a local anesthetic can often be used instead of a general anesthetic

Dr J. J Buchanan of Pittsburg finds that in cases of pronounced shock, in which a general anesthetic is contra-indicated, operations of necessity, such as amputations, can be done without anesthesia of any kind, without materially adding to shock, if performed with celerity. He finds, also that, under similar conditions, abdominal section and internal manipulations are well endured without anesthesia, if manipulation is not too complicated or prolonged A general anesthetic is contra-indicated in head injuries with pronounced cerebral symptoms, also in collapse of the lung from external open injury

Dr John B Roberts of Philadelphia thinks that ether acts as a heart stimulant and lessens shock, but that it may be only temporary. He thinks death is usually due to a "bad etherizer" He has had little experience with other anesthetics

Dr. Joseph C Bloodgood of Baltimore, says

> In my experience all anesthetics, except perhaps nitrous oxid, as they are toxic substances, would rather increase the effects of trauma It is quite true that indirectly they may do good when they allow us to remove all cause of the shock greater than the anesthetic itself, for example, hemorrhage, infection, perforation in peritonitis, pancreatitis, lacerated and crushed limbs Here we must risk the danger of the anesthetic in order to remove a condition which is keeping up the shock I am also of the opinion that there is a definite relation between the degree of seriousness of the

> condition and the shock and the part of the body subjected to operation or injury. It is my opinion that the anesthetic acts about the same except in surgery of the chest. The anesthetic of choice to-day with me is nitrous oxid gas and oxygen; next, nitrous oxid combined with ether; next, ether alone by the drop method; chloroform I rarely employ; spinal anesthesia never.

Dr. A. J. Ochsner of Chicago says that he simply uses ether in all cases whether traumatic or non-traumatic. He has kept records in a large number of cases in which chloroform was given until anesthesia was accomplished, then ether, except where contra-indicated. Then for a time he used nitrous oxid gas but has gone back to the use of ether by the *open drop method.*

Professor Rovsing of Copenhagen, says:

> I use always, in traumatic as in ether cases, only the morphin-ether narcosis with the Wanssleer apparatus. I have never seen an accident, never had but one disagreeable moment in using this method.

Dr. Walter Lathrop of the state hospital for the middle coal-field of Pennsylvania at Hazleton, writes:

> Our traumatic surgery consists almost entirely in the treatment of accidents sustained in and about the mines, and the question as to whether an anesthetic should be employed is answered in the injury itself, in most instances, and not entirely dependent on the judgment of the surgeon, for the majority of the cases are of such a nature as to demand immediate operation on admission.
>
> From the time the accident occurs until the patient is received in the hospital considerable valuable time elapses, the distance they are transported varying from one to ten miles, and it is only natural to suppose that many suffer excruciating pain and gladly submit to any course of treatment by which their suffering can be alleviated. It invariably happens that those severely injured beg to be "put to sleep," as they express it. With the fear of taking an anesthetic, so commonly encountered in non-traumatic surgery, eliminated, the depressant action of the anesthetic does not manifest itself so markedly, while the pain endured undoubtedly acts as a stimulus to the various nerve centers. These factors, acting as a unit, preclude to a great extent any danger in administering anesthesia, except in those cases in which exhausting hemorrhage has occurred or in profound nervous depression, for in this type it would be almost malpractice to attempt any local treatment without first endeavoring to combat the constitutional deficiency. An anesthetic is administered fearlessly in injuries of various parts. No discrimination is made as to the injured parts, following of course the rules mentioned above. For general anesthesia, our anesthetic of course is chloroform, preceded in all cases by a hypodermic injection of morphin, gr. ¼, and atropin, gr. 1/150, based entirely on its successful use covering a period of eight years. In extreme cardiac weakness ether is sometimes substituted. Ethyl chlorid is used largely in superficial work. Traumatic shock, unless it be of a very severe type, does not contra-indicate the employment of anesthesia, for it has been found that in many cases the circulatory and respiratory systems often return to a condition nearer normal while under the anesthetic; especially is this true if the function of either has been embarassed directly by the injury. Death from anesthesia, either sudden or a reasonable length of time after its use in traumatic surgery, we have not yet experienced.

Professor Tuffier of Paris says that ether is the anesthetic of choice, but that he uses chloroform in chest conditions and uses a local anesthetic only on the extremities, as fingers and toes. He advises waiting until the shock has disappeared before operation and thinks the mortality depends on the severity of the shock. He uses spinal anesthesia in treating fractures of the extremities.

Dr. John H. Gibbon of Philadelphia says:

> In the absence of shock, I do not see that trauma in any way affects the anesthesia, except in extensive injuries of bones or extensive injuries of fatty structures when I think that fat embolism of the lung may be aggravated by ether. Serious injury of the thorax, I think, renders the administration of an anesthetic more dangerous. As a rule, I employ the following sequence in producing anesthesia, morphin gr. ¼, atropin gr. 1/150, by hypodermic twenty minutes before the anesthesia is started, then ethyl chlorid followed by ether. Spinal and infiltration anesthesias are used where possible, if the general anesthetic is contra-indicated. Where I am obliged to operate in shock, as for instance in hemorrhage, I employ the same sequence as in other cases. Except for shock, I do not see that the anesthetic acts any differently in traumatic and non-traumatic cases.

Dr. George Tully Vaughan of Washington does not find that there is any marked *difference in anesthesia in* disease and in trauma. He prefers ether to any other anesthetic and thinks that even in minor cases a general anesthetic is preferable to local anesthesia and is not any more dangerous than as correspondingly large dose of a local anesthetic.

Dr. John Rogers of New York says that ether is the anesthetic in general use at Bellevue Hospital. He prefers nitrous oxid and oxygen for injuries of the extremities but thinks ether or chloroform is to be preferred to nitrous oxid in injuries of the head.

Dr. Charles K. Teter of Cleveland has made some experiments comparing nitrous oxid with ether and finds that shock-producing trauma is better borne under nitrous oxid. He finds that the blood-pressure remains higher under nitrous oxid, and in shock it rises, whereas under ether it usually falls. He has used nitrous oxid in something over 15,000 cases with only one death; and this was not due to the anesthetic.

Dr. Edward H. Ochsner of Chicago does not think that traumatism *per se* is an indication against the use of an anesthetic if properly given. He thinks that ether if properly given is almost devoid of danger; he prefers training a lay woman to give anesthetics. He thinks that the subject of anesthesia is really settled and that any further investigation can not add materially to our knowledge of the subject.

Dr. W. W. Grant of Denver prefers ether with oxygen. He advises against the administration of any anesthetic until the patient has reacted. He thinks there is "less shock and greater immunity from anesthetic" in head injuries than in other parts of the body.

Dr. J. D. S. Davis of Birmingham, says:

> Ether, I think, is the best anesthetic in shock in traumatic surgery. I have had no deaths from anesthetics in traumatic surgery. Ether is the safest anesthetic in fracture cases, internal injuries and rupture cases, especially where shock is present. In traumatic cases with shock, ether is not only more satisfactory and safer than chloroform, but as a rule, relieves the shock. In traumatic surgery, I believe that primary operation under ether is safer than waiting for shock to subside before administering the anesthetic. I have had very little experience with nitrous oxid gas and oxygen, but I believe it is the coming anesthetic in traumatic surgery, because it has marked advantage over ether in the relief of shock.

My personal experience has been confined principally to mine injuries, including injuries of the head, spine, extremities and trunk. It has been my good or ill fortune to operate on eighteen or twenty spinal injuries with very little benefit to the patients, as in most instances the cord has been torn in two; in one case I sutured the cord and my patient did well for about two weeks when he died from an ascending infection from the bladder; I have invariably used ether in these cases, after the patient had reacted. A few years ago I became interested in the use of stovain as a spinal anesthetic and found that it reduced the shock where the extremities were badly mangled and enabled us to operate earlier than where a general anesthetic was used.

325 Woodward Building.

THE COMPARATIVE DANGER OF ETHYL CHLORID AS AN ANESTHETIC *

HORATIO C. WOOD, JR., M.D.
PHILADELPHIA

Statistics are notoriously unreliable, and yet there are certain problems which can hardly be studied by any other method. A striking illustration of one of the causes which leads to the untrustworthiness of vital statistics is found in the recent paper by Miller[1] on ethyl chlorid anesthesia. In this paper Miller presents the statistics on 43,796 anesthesias with ethyl chlorid, in which there were 5 deaths. In the same paper, however, there are references to some 30 fatalities occurring during ethyl chlorid anesthesia, of which at least 20 are directly attributable to the anesthetic. These cases, however, could not be included in his table, because they were reported as isolated cases without any means of determining the corresponding number of anesthesias which had been produced with safety. Miller from his statistics places the mortality from ethyl chlorid anesthesia at 1 in 8,800 cases. McCardie[2] presents statistics of 9,711 cases with four deaths of which he was cognizant. Of these cases 2,000 (with no deaths) the personal experience of McCardie are included in Miller's table. It would seem, however, that it is only fair in attempting to reach conclusions as to the danger of these anesthesias, that McCardie's statistics, although they cover a comparatively small number of cases, should be added to those of Miller. If we do this we have statistics of 51,507 cases with 9 deaths, a mortality of 1 in 5,710. The statistics on ether and chloroform of Coates, Gould, Garree, Gurlt and others,[3] covering several million cases, give a mortality from chloroform of about 1 in 3,500, and from ether, 1 in 15,000. From the statistical standpoint, therefore, ethyl chlorid would seem to stand between ether and chloroform, but closer to the latter.

This conclusion, however, is unfair because the anesthesias by ethyl chlorid have practically all been of but a few minutes' duration, and the secondary dangers which occur as a result of prolonged anesthesia and which have caused a considerable bulk of the fatalities of ether and of chloroform do not come into consideration in the case of ethyl chlorid. Ethyl chlorid, on account of the quickness and fugaciousness of its action, enters into competition with nitrous oxid gas rather than with ether. Lee,[4] in reviewing the use of ethyl chlorid at the Pennsylvania Hospital, says that, in spite of the comparatively high mortality which has followed its use at that institution, it is "still being used for minor surgical procedures and dressing more painful wounds," and also as a preliminary to ether. Of twenty-two deaths reported by Luke,[5] 8 were in dental cases. It is evident, therefore, that the fair comparison for ethyl chlorid is with nitrous oxid when used for a few minutes only. If we set alongside of the commonly accepted mortality for the latter gas so used, 1 death in 1,000,000 anesthesias, and the figures for ethyl chlorid, 1 in 6,000, the danger of this agent is evident.

As remarked by Miller, the safety of an anesthetic is to be judged by two factors: first, the range between the amount required to produce unconsciousness and that required to kill; and second, the character of the signs which indicate approaching danger. As this author points out, the danger signals in ethyl chlorid anesthesia are such as may be easily overlooked by any except the most experienced anesthetizer. There is another element of danger which comes to light in studying the reports of the individual fatalities from ethyl chlorid, and that is the extraordinary suddenness of the end. In the great majority of these cases death has occurred from an anesthesia of less than five minutes; in one instance the patient was dead within half a minute from the beginning of the inhalation.

McCardie calls attention to the high mortality from this anesthetic in England as compared to the European continent, which he believes is due to the fact that it is habitually administered in that country by the "closed" method; a number of experienced anesthetizers are in accord with this view.

While I may perhaps seem unduly harsh in my condemnation of an anesthetic which has given good results in the hands of a number of anesthetizers of large experience, it is because of my profound conviction that the freedom with which this drug is being employed by inexperienced and untrained persons, with the idea that it is practically as safe as nitrous oxid, is little short of criminal. In this country, especially outside of large cities, it is being used habitually by dentists in connection with the extraction of teeth. This practice, I believe, is one which the medical profession should strongly condemn. The only possible advantage possessed by ethyl chlorid over gas, aside from the question of cost, is its portability. Such considerations, however, should not be allowed to stand for a moment as against the fact that ethyl chlorid is about 200 times as dangerous as nitrous oxid.

434 South Forty-Fourth Street.

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* Approved by the Committee on Anesthesia of the American Medical Association.

[1] Miller, A. H.: Value of Ethyl Chlorid as a General Anesthetic, Boston Med. and Surg. Jour., May 26, 1909, p. 643.

[2] McCardie, W. J.: Ethyl Chlorid as a General Anesthetic, Brit. Med. Jour., March 17, 1906, p. 616.

[3] See Wood's Therapeutics, p. 38, Edition 14.

[4] Lee, W. E.: Use of Ethyl Chlorid as a General Anesthetic in the Pennsylvania Hospital, Ann. Surg., November, 1908, p. 461.

[5] Luke, T. D.: Twenty-two Fatalities Which Have Occurred Under Ethyl Chlorid, Lancet, London, May 5, 1906, p. 1235.

Simple Non-Operative Cure of Hemorrhoids.—J. Toth writes to the *Wiener medizinische Wochenschrift*, Nov. 19, 1910, to call attention to a simple means of keeping hemorrhoids under control, and finally curing them, by gentle, constant compression. This is accomplished, he says, by means of a rather loose pledget of absorbent cotton, not larger than a large pea, which is introduced into the anus between the internal and the external sphincters. Under the influence of the compression the varicose enlargement of the veins at this point retrogresses and the hemorrhoids become obliterated. The loose cotton pledget has several advantages over a solid device for the purpose: The anus does not behave toward the cotton as toward a foreign body, while the gentle compression day and night is scarcely perceived. The pledget does not have to be removed before defecation, as it is expelled with the stool. Systematic perseverance in its use is the main thing. Toth says that he has been successfully applying this simple measure for several years.

PREVENTION OF HEMORRHAGE IN PULMONARY TUBERCULOSIS BY THE ADMINISTRATION OF AUTOGENOUS VACCINES *

ROSWELL T. PETTIT, B.S.
Fellow in Pathology, University of Chicago; Bacteriologist, Ottawa Tent Colony
OTTAWA, ILL.

Discharge of blood from the mouth may be caused by heart disease, carcinoma, hemophilia, arteriosclerosis, vicarious menstruation, hysteria, aneurysm, bleeding gums, or nasal, pharyngeal, or gastric lesion, but the great majority of hemorrhages are from tuberculosis of the lungs.

Stricker[1] found 221 of 480 hemorrhages due to tuberculosis, and in 196 more this was probably the cause. Sée[1] (1884) says, "Aside from infectious diseases, hemophilia, and acute infections of the lungs (pneumonia, abscess, gangrene) we only know of two real causes of hemoptysis—heart disease and pulmonary tuberculosis."

The pathologic conditions preceding hemorrhage vary with the stage of the disease. In early cases it may be due to localized hyperemia in the lung induced by violent or long-continued exercise; or, more likely, due to weakening and erosion of small blood-vessels by the growth of tubercles. Early hemorrhages are always venous; in later stages hemorrhages arise from both the arteries and veins (Minor[1]). The connective tissue of the adventitia is more resistant to dissolution than the surrounding pulmonary tissue, and vessels stand out in the walls of cavities unsupported; on these unsupported vessels aneurysms develop and hemorrhage results with a weakening of the wall of the aneurysm and any slight rise in blood-pressure. That hemorrhage is due, in many cases, to rise in blood-pressure is seen in its relation to overexertion. Hemorrhage may also result as an oozing of blood from granulations lining old cavity walls.

The frequency of hemorrhage has been reported as between 30 and 80 per cent. De Renzi[1] says that hemorrhage occurs in one-third to two-thirds of his cases (1894), Fox[1] (1891) in 54 per cent, Aufrecht[1] (1905) in 26.4 per cent, Williams[1] (1887) in 57 per cent, Walsh[1] (1871) in 81 per cent. (Minor). In the 181 cases which I have studied the percentage is much less, 15.46.

The immediate causes of hemorrhage given by various authors are overexertion, straining at stool, blows on the chest wall, and other things that would cause an undue rise in blood-pressure. Excitement, worry, temper, etc., would act in the same way. Hot, damp weather favors hemorrhage. The systemic plethora of the premenstrual period and vicarious menstruation may be rare causes. The overfeeding of tuberculous patients not infrequently predisposes to hemorrhage. The importance of sex is slight. The season of the year has a marked influence on hemorrhage; the worst period of the year, in the vicinity of Chicago, being the summer, and the hot spells are especially dreaded. Epidemics of hemorrhages have occurred, however, at other periods of the year, frequently during the winter and spring. These, I believe, are due to epidemics of "colds," influenza, etc.

Fox[1] (1891) says that heredity is important, patients with a marked family history of tuberculosis showing the greater tendency. Age is also an important factor; hemorrhage is very rare in childhood, more common between the ages of 20 and 30, less common after 45, and rare in old age.

The influence of mixed infection on hemorrhage is not given by any of the authors I have consulted, but Flick concludes from the bacteriologic studies made by Ravenel,[2] Irwin, and himself that the pneumococcus is an important agent in causing hemorrhage. The influence which mixed infection may exert on the pathologic changes occurring in pulmonary tuberculosis is by no means definitely known. The bacteriologic examination of the sputum reveals but little in the majority of cases because so many of these secondary organisms are found under normal conditions living saprophytically on the mucous membranes in various parts of the respiratory tract. Some authors state that the bronchi in health are free from bacteria (Cornet[3]). Others assert that a great variety may be present even in health. Post-mortem bacteriologic studies of the lung have revealed but little. Streptococci, notorious as causing terminal septicemia, have been found in a majority of the cases examined. How are we to know whether they were present in the lung early in the disease or invaded as a terminal septicemia? The findings of most investigators in this field show the presence of the *Bacillus coli*, *Proteus vulgaris* and other post-mortem invaders, in addition to the pyogenic cocci and the diphtheria bacillus in the lungs examined. Organisms of secondary infection have been found in the blood-stream in a small number of cases, usually far advanced, and but a short time before death. Panichi,[4] however, reports that in three of four cases he recovered organisms of mixed infection from the blood-stream at least two months before death.

Prudden[5] (1894) was unable to produce cavities in guinea-pigs by the inoculation of tubercle bacilli alone. He was able to produce them, however, in tuberculous guinea-pigs by intratracheal injections of streptococci. Marmorek,[6] on the contrary, was able to produce cavities by injecting tubercle bacilli in conjunction with large quantites of strong tubercle toxins.

Webb[1] says that an irregular opsonic index to any of the secondary organisms is diagnostic of mixed infection. Wirth[7] examining twenty-five cases, found abnormal indices in cases showing no temperature and did not find irregular indices in cases showing high and irregular temperatures. He found serums giving a normal result at the time of drawing to show abnormal indices the following day. The normal index he considered as between 0.8 and 1.2. He found no change in the index to *Bacillus capsulatus*, *tetragenus*, *catarrhalis*, *Bacillus pneumoniæ*, *Bacillus coli*, or *subtilis*, but he found a variation to staphylococcus, streptococcus, pneumococcus, and influenza bacillus. The following were his results: influenza, 2 out of 17 examined; staphylococcus, 2 out of 17 examined; pneumococcus, 18 out of 24 examined; streptococcus, 6 out of 19 examined. I have taken the opsonic index to the pneumococcus, streptococcus and staphylococcus in 40 cases representing all stages of the disease, both active and inactive, and found an abnormal index in only one case. The index in this case was 0.75 and this was to the staphylococcus. This patient had an anal fistula in which the staphylococcus was present in large numbers. The normal index in both Wirth's report and my own was considered as between 0.8 and 1.2. Therefore I do not consider the opsonic index of value in the diagnosis of mixed infection in tuberculosis.

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* Work done under the Max Pam Research Fund. The article was awarded the Freer medal by the prize essay committee of the Alumni Association of Rush Medical College.

[1] Klebs: Tuberculosis, ed. 1, New York, 1909, Appleton & Co., p. 212

[2] Ravenel and Irwin: Phipps Inst., Rep., 1906 iii, 229; iv, 392.

[3] Cornet: Nothnagel, Encyclopedia of Practical Medicine, Am. ed., Philadelphia, 1904, Saunders & Co., p. 488.

[4] Panichi: Der Pneumococcus im Blut bei Lungentuberculose, Berl. klin. Wchnschr., 1908, No. 41, p. 1840.

[5] Prudden: Concurrent Infection and Formation of Cavities in Acute Pulmonary Tuberculosis, New York Med. Jour., July 7, 1894.

[6] Marmorek: Production expérimentale de cavernes pulmonaires chez le cobaye et le lapin. Soc. de biol. Séance du 26 Janvier, 1904.

[7] Wirth: Beitr. z. Klin. d. Tuberk. (Brauer's), xii, 159.

It is difficult to estimate the importance of mixed infection in tuberculosis at the present time. The experimental results are contradictory and the conclusions of investigators are at variance. Because of the atypical course of the disease, the rapid variations in temperature at irregular intervals, the fact that extensive infiltration may occur in a few days and disappear leaving areas of caseation or softening, I am convinced that organisms other than the slow-growing, persistent, slightly toxic, tubercle bacillus are concerned. Some authors have contended that practically all the damage to lung tissue is done by organisms other than the tubercle bacillus.

Weaver[8] has shown that injections of killed streptococci protects rabbits against subsequent injections of large numbers of living virulent streptococci. The work of Wright[9] and others has shown that injections of killed and attenuated bacteria have a protective effect against subsequent infection. This production of active immunity has been known for a long time and its importance in preventive medicine has been proved conclusively by Jennerian vaccination against small-pox, and Pasteur's vaccination against chicken cholera, anthrax and hydrophobia. It has been successfully employed against typhoid. Wright has collected statistics dealing in all with 49,600 individuals, of whom 8,600 were inoculated and showed a case incidence of 2.25 per cent. with a mortality of 12 per cent. In the remaining 41,000 uninoculated the case incidence was 5.75 per cent. with a case mortality of 21 per cent.

The data on protective inoculations against pyogenic infections are very meager, but the results that have been obtained in therapeutic inoculations against the gonococcus, streptococcus, staphylococcus, pneumococcus, etc., especially in chronic, subacute and localized infections, seem to show that injections of killed organisms hasten recovery and protect against relapse.

Webb[1] has used killed organisms against mixed infection in tuberculosis and has observed a protection in inoculated cases against influenza. Five patients inoculated against influenza with their own organisms, and eight inoculated against influenza with stock vaccines, all giving histories of repeated former attacks, escaped the epidemic. Preventive inoculations were not given in thirty-two cases, the patients denying that they ever had influenza, and fifteen succumbed to an influenza epidemic.

Since June 15, 1909, I have administered autogenous vaccine in thirty-one cases of pulmonary tuberculosis at the Ottawa Tent Colony. Of these thirty-one cases twenty-one were under observation two months or longer. Patients not under observation at least two months are not included in this report.

Vaccines were not administered as a protective measure, but therapeutically. It has been observed that during the fall and winter of 1909-10 hemorrhages have been less frequent than before. The class of patients, diet, exercise, sleeping conditions, and supervision were practically the same as in preceding years; the only new factor introduced into the treatment was the autogenous vaccines. It occurred to me that possibly the injection of vaccines against the organisms of secondary infection had a protective action against tissue dissolution and hence against hemorrhage.

The vaccines administered in all cases were autogenous. They were prepared by taking carefully selected particles of sputum and washing by whipping vigorously in several changes of sterile water with sterile forceps. The washed sputum was then introduced into about 10 to 15 c.c. of either plain bouillon or a medium made up of 1 part of sterile beef serum and 3 parts of bouillon. This was incubated at 37 C. for twenty-four or forty-eight hours, at which time a moderately thick growth had developed. The beef serum mixture appeared to have no advantage over the plain bouillon. The growth was then examined for bacteria, and the relative number of cocci, in pairs, tetrads, clumps and chains were noted. Allen[10] says the proportion of the various organisms thus grown is approximately the same as when introduced. More recently I have been using large blood-agar slants for the cultivation of bacteria from the sputum. The emulsion of bacteria was shaken vigorously for ten or fifteen minutes, centrifuged at high speed for from forty-five seconds to one and one-half minutes, depending on the density, and the supernatant homogeneous emulsion decanted into another tube.

The number of organisms was then estimated by Wright's method. This is done by taking up one volume of 1.5 per cent. solution of sodium citrate in a capillary pipette, then equal volumes of blood and bacterial suspension, mixing thoroughly on a slide, drawing up into the pipette and then making four slides by placing a small drop on each and drawing out in a thin smear by dragging the edge of another slide over it. These were stained with methylene blue and the erythrocytes and bacteria present in fifteen fields in each of the four slides were counted. An estimation of the number of organisms present in a cubic millimeter of the emulsion was then calculated. The number of erythrocytes in 1 cubic millimeter was considered as 5,000,000; the number of erythrocytes in the number of fields counted is to the number of bacteria as 5,000,000 is to x. By multiplying by 1,000 the approximate number of organisms in 1 c.c. was obtained. This is a long and laborious procedure, so I tried counting the bacteria in a blood-counting chamber in the same way the blood-count is made. To do this it was necessary that the organisms be stained. I used a fresh, carefully filtered solution of gentian violet or Unna's methylene blue. I drew some of this stain into the pipette, a volume of the bacterial suspension, to be estimated, then more stain, and finished my dilution with either distilled water or salt solution. The pipette was shaken vigorously, several drops blown out and a small drop placed in the Thoma or Turck counting-chamber and covered with an ordinary thin coverslip. The coverslip used in blood-counting is too thick to use with the oil immersion lens. The chamber was then set aside until the organisms had settled: it usually takes about one to six hours, depending on the diluent used and the size and number of the organisms present. Whether the organisms have all settled out or not is easily determined by focusing on the lines of the chamber and then raising the lens through several planes and looking for organisms in suspension. The bacteria are well stained and easily distinguished. If there are confusing particles of dirt present, a weak alcoholic solution can be used as a diluent; this gives a very clean slide and the bacteria are easily picked out. The method is very simple and rapid, and, I believe, more accurate than Wright's method. In the preparation of vaccines during the past four months, November, 1909, to March, 1910, I have used this method exclusively.

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[8] Weaver: Jour. Infect. Dis., 1908, v, 589.

[9] Wright: Studies on Immunization, Ed. 1, London, 1909, Constable & Co., Ltd.

[10] Allen: Vaccine Therapy and Opsonic Treatment, Ed. 2, Philadelphia, 1908, Blakiston's Son & Co.

The organisms were killed by heating to 60 C. for forty-five minutes, either before or after counting, and sterility was insured by inoculating a tube of broth or blood-agar from the heated suspension. The suspension was then placed in a sterile bottle of brown glass and a drop of strong phenol or compound solution of cresol added.

The size and frequency of the dose administered depended on the condition of the patient. In afebrile patients in fairly good physical condition comparatively large doses, 200 to 500 million, were given, at intervals of seven to ten days. In febrile cases with the patients *in poor* physical condition, doses of 25 million were administered every second or third day for several doses and then increased to 50 and 100 million. When doses of 100 million or more were given the interval was lengthened to from five to ten days. In all cases considered in this report, at least three doses were administered. The number of hemorrhages occurring in all classes of patients under observation for at least two months, from June 15, 1908, to March 1, 1909, are compared with the number of hemorrhages occurring in all classes of patients under observation for at least two months, from June 15, 1909, to March 1, 1910. The number of hemorrhages occurring in all classes of patients receiving vaccines during the latter period is compared with the number of hemorrhages occurring in cases not receiving vaccines during the same period.

TABLE 1.—HEMORRHAGES BETWEEN JUNE 15, 1908, AND MARCH 1, 1909, NO PATIENTS RECEIVING VACCINES

Class.	Cases, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	42	6	14.28
Moderately advanced..	44	11	25
Advanced	13	1	7.7
Far advanced........	1	0	....
Total	100	18	18

TABLE 2.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND MARCH 4, 1910, ALL PATIENTS, THOSE RECEIVING VACCINES AND THOSE NOT RECEIVING VACCINES

Class.	Cases, No.	Vaccinated, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	16	3	0	0
Moderately advanced..	30	4	5	16.6
Advanced	24	11	4	16.66
Far advanced........	11	3	1	9.1
Total	81	21	10	12.34

TABLE 3.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND MARCH 1, 1910, PATIENTS RECEIVING VACCINES

Class.	Cases, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	3	..	....
Moderately advanced..	4	..	....
Advanced	11	1	9
Far advanced........	3	..	....
Total	21	1	4.7

TABLE 4.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND MARCH 1, 1910, PATIENTS NOT RECEIVING VACCINES

Class.	Cases, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	13	..	....
Moderately advanced..	26	5	19.2
Advanced	13	3	23.1
Far advanced........	8	1	12.5
Total	60	9	15

It is seen from the tables that the total number of hemorrhages during the same period of time and during the same seasons of 1909-1910 is about 50 per cent. less than the total number of hemorrhages occurring during a corresponding period in 1908-1909.

From June 15, 1909, to March 1, 1910, in *patients* receiving vaccines the percentage of hemorrhage *is only* one-third of the percentage in patients *not receiving* vaccines. All patients were under exactly the same conditions of housing, feeding, and medical supervision. While it is not admissible to draw definite conclusions from such a small number of cases, the results seem to be indicative and will justify the administration of autogenous vaccines in a larger number of cases as a protective measure. A report will be made next year.

I wish to thank Miss Elizabeth Peck and Miss Elizabeth Byrne for assistance in the preparation of vaccines and the determination of opsonic indices.

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TINCTURE OF IODIN FOR THE UMBILICAL CORD

Joseph S. Lewis, M.D., Buffalo, N. Y.

The increasing use of iodin suggested to me its application to the freshly severed umbilical cord. The tincture, as is well known, tends to form a dry iodin-impregnated scale or scab over any moist surface not giving *off* a purulent discharge, such as a clean varicose ulcer or a freshly sutured wound. The treatment to be described was tried on several infants with satisfactory results. In one case the cord was found mummified and separated on the fourth day, the granulated surface healed to a small dry scab within the same week. Others averaged ten days to two weeks for the entire process. Iodism was not observed. The technic used is as follows:

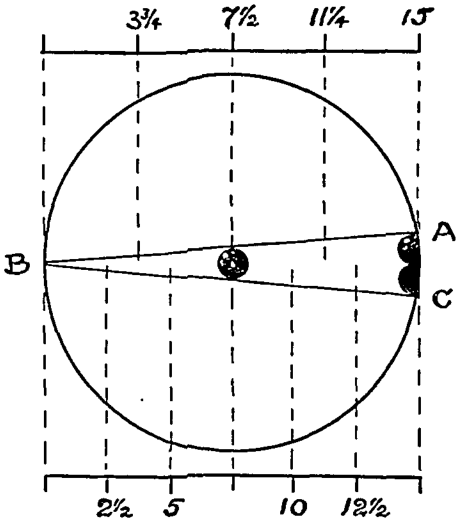
As soon as the cord is cut and tied, blood and vernix caseosa are wiped off with a sterile pledget. The stump is then painted with the *official* tincture until deeply stained: especially the cut end, the ligature, and the line of attachment. Due care should be taken to avoid the epidermis beyond the line of union with the cord. After the bath, dry sterile gauze or cotton is packed about the stump and held with the usual binder. In case the dressing becomes soiled or moist it is changed at once. After the cord falls off the granulating or denuded surface remaining is painted as before, and the dressing is reapplied. The advantages of the method consist in simplicity, increased rapidity of drying, and the penetrating bactericidal property of the drug.

471 Virginia Street.

A SIMPLE METHOD FOR THE MEASUREMENT OF BLOOD-CELLS

PHILIP ATLEE SHEAFF, M.D.
PHILADELPHIA

In the microscopic examination of blood it sometimes becomes desirable for purposes of comparison and classification to know, with some degree of accuracy, the size of certain cells. The method about to be described is simple, fairly accurate, and can be used by anyone who cares to expend a little patience in adapting the eye-piece of his microscope for the procedure, and when once accomplished, having a permanent fixture.



Sketch illustrating a simple method for the measurement of blood-cells. View of field, with available measurements in microns, when the radius is divided into halves and thirds. Spun glass A B C giving black line effect and forming gauge.

It consists in arranging two pieces of spun glass across the diaphragm of the eye-piece so that an acute angle is formed, the apex of the angle coming exactly to one border of the field which is the opening in the diaphragm. The other ends of the spun glass are separated sufficiently so that at the margin of the field they just enclose two normal red blood-cells, one above the other, in apposition, thus making approximately 15 microns.

The spun glass may be obtained by heating a piece of glass stirring-rod in the flame of a Bunsen burner and quickly pulling the ends apart after removing from the flame. A piece of this minute thread may be easily handled by a silver probe, the end of which has been warmed and touched to a small piece of paraffin, a little of the same substance being previously distributed over the diaphragm at diametrically opposite points.

When the final satisfactory adjustment of the spun glass has been made a small piece of paraffin is gently placed over the ends of the same and the heated end of the probe quickly "solders" them permanently in place.

A normal red cell of 7.5 microns will just fit between the lines when in the center of the field, and it requires but a glance to locate the position of a cell in relation to the apex or base of the triangle when it is placed so that both lines touch its edges.

A cell so placed can easily be recognized as being in the middle of the right half of the field, or the middle of the left half of the field, or in the outer, middle, or inner thirds of either half of the field, giving a scale of microns marked in the sketch, which for blood work is particularly appropriate; and a scale for comparison in other cases which may suggest themselves.

4008 Baring Street.

A CASE OF HAIRY TONGUE

M. LEON, M.D.
MT. OLIVE, ILL.

I wish to report a case of "hairy tongue" which came under my observation and treatment a few weeks ago.

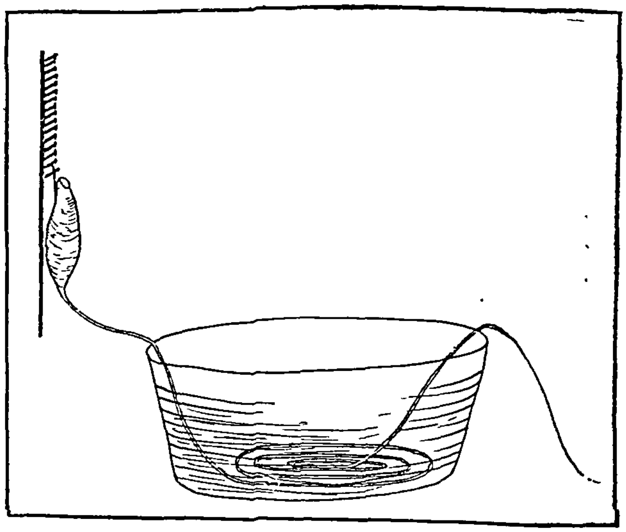
History.—The patient, Mrs. W., aged 75, informed me that she had been suffering from chronic indigestion for the last five years. On examination of her tongue I found a black, velvety coating strongly resembling a mass of long, fine hair. The coating was located in the center of the tongue on the papillæ filiformes. A scraping of it was put under the microscope for examination and was found to contain epithelium and an immense number of mycelia. The papillæ filiformes were somewhat hypertrophic.

Treatment.—After applying for several days a strong solution of potassium chlorate, pure hydrogen peroxid, etc., without marked benefit, I scraped off the coating under local anesthesia and applied a 10 per cent. alcoholic solution of mercuric chlorid. This application was repeated daily for two weeks, with the result that the coating has entirely disappeared.

A SIMPLE METHOD OF RECTAL FEEDING OR PROCTOCLYSIS

EBEN C. HILL, M.D.
First Lieutenant Medical Corps, U. S. Army
MADISON BARRACKS, N. Y.

The excellent results obtained in the treatment of peritonitis by proctoclysis, and the number of cases demanding nutrient enemas, have resulted in the devising of various forms of more or less elaborate apparatus for introducing fluids slowly and continuously into the rectum at a constant temperature. For hospital work or when refined instruments can be used any of these give admirable results. But in certain cases occurring outside of hospitals a simple and readily improvised method is sometimes of value.



Protoclysis apparatus, consisting of an ordinary rubber enema bag, long rubber tube and rubber catheter, a large pan containing hot water in which is coiled the rubber tube for maintaining the proper temperature of the saline fluid; also a simple device for regulating the height of the bag. The apparatus may be used also for rectal feeding.

In a cancerous condition of the stomach demanding rectal feeding, and in a recent case of duodenal ulcer, I successfully used the following device, and its simplicity may recommend it in emergencies in which a more elaborate apparatus is not obtainable:

> Two-inch nails are driven into a small board at intervals of an inch for about two feet. This board when tied to the bed or nailed to the wall gives a means of lowering or raising the enema bag. About fifteen feet of medium heavy tubing is attached to the end of an ordinary two-quart enema bag, and a small rubber catheter is joined to the end of this tube. Near the edge of the bed is placed a pan containing two or more gallons of warm water, the temperature of which is about 100 F. Into this pan the tube passes and is coiled so that about twelve feet of it is immersed in the water. A heavy rubber such as is found in the lavage tube is needed in order that the tubing may not twist itself to the surface as happens with inferior or light weight tubing. The pan should be near the patient so that the rubber pipe and catheter may have only a short distance to pass to the rectum.
>
> The enema bag is then leveled so that the flow shall be about twenty drops a minute. The normal salt solution or nutrient fluid, being warmed to about 99 F. when put into the bag, regains any heat lost during the injection in passing through the coils of tubing in the warm water. As a consequence the fluid enters the rectum at a fairly constant temperature. Once an hour an attendant can add a little hot water until the temperature is "a little warmer than the hand." Three gallons of water in an ordinary dish pan at a temperature of 100 F. in a room where the temperature is 72 F. loses only about four or five degrees in half an hour or longer.

Therapeutics

HYPOSECRETION OF THE THYROID

The disturbances caused by an insufficiency of the thyroid gland will, of course, depend on whether the secretion is diminished or entirely absent. Also, it is logical to believe that certain elements of the thyroid secretion may be diminished while others are normal, or it is even possible that some elements may be increased while others are diminished. Such a supposition will account for the manifold indications both of hypersecretion and hyposecretion. The conditions caused by diminished secretion may be enumerated as follows:

Chlorosis
Amenorrhea
Obesity
Goiter
Eczema
Hysteria (depressant forms)
Vomiting of pregnancy
Eclampsia
Epilepsy
Melancholia
Slow growth in children
Cretinism
Adiposis dolorosa
Lipomatosis
Myxedema
Senility

The theory of hypothyroidea, or a subsecretion of the thyroid gland, has been advocated by some for many years, and now the condition has been generally accepted as clinically recognizable, even when present in small degree. If the secretion is entirely absent in a young child, a cretin results. If it is seriously defective, there is slow and stunted growth. If it is present in larger amount but still much insufficient, juvenile obesity is present, with a phlegmatic disposition, slowed pulse, and a delayed puberty. If there is an undersecretion at puberty (and this occurs most frequently in young girls) we have amenorrhea, perhaps chlorosis, and often peculiar nervous crises, even epileptic attacks. The typical symptoms of hypothyroidea are best recognized and studied in the adult female. If there is absolute absence of secretion myxedema develops. A normally diminishing secretion, such as occurs after 45 or 50 years of age, is shown by symptoms, the most evident being the addition of flesh, especially deposits of fat, a slowly increasing blood-pressure, and a gradual development of connective tissue in various parts of the body. If this secretion diminishes normally as age advances into old age, the skin begins to lose its nutrition and dries and wrinkles, with a tendency to the occurrence of eczemas.

PRINCIPAL USES OF THYROID

The *absence of menstruation*, after it has once developed, without pregnancy or acute or chronic disease, generally points to a diminution of the thyroid and ovarian secretions. If the patient is anemic, iron and ovarian extract should be the treatment. If the patient is not very anemic and tends to put on weight, thyroid is the treatment. The dose of thyroid should be small, not more than 3 grains of the dried extract once a day.

There has never been a satisfactory explanation of the condition of *chlorosis*. For some reason these patients do not metabolize the iron of their food. Large doses of iron always cure these patients. Arsenic does the same, possibly from its stimulation of the thyroid gland, possibly from some unexplained antiseptic action. Sometimes some of the laxative inorganic salts, in small doses, act satisfactorily. Sometimes small doses of thyroid are efficient. It is generally true that if these girls begin to menstruate normally the disease disappears, and thyroid is the best emmenagogue that we possess.

Infantile obesity is best modified by small doses of thyroid, and if recognized early the condition may be inhibited. The disturbance in metabolism that is most frequently improved by thyroid is *obesity*. Thyroid will probably cause loss of weight in every instance provided a sufficient amount is given, but at the same time there is a great nitrogenous loss, and there is always the danger of causing disturbances due to an increased amount of thyroid in the blood, some of which may be serious. It can cause faintness and loss of strength, and a debility which may not be recovered from in a considerable length of time. If weight is being added, especially in women, after 45, small doses of thyroid may prevent it. If the fat is already present, it may take considerable dosage to reduce it. The large doses which were once used for this purpose are not justifiable, and a patient under thyroid treatment for obesity should be very carefully watched, and the administration should cease as soon as any unpleasant symptoms appear. When weight is put on in younger life, especially in women, thyroid is the most efficient treatment, and the dose required is generally not large. The value of combining such treatment with a diet free from sugar and with a diminished amount of carbohydrates, and with physical exercise, should not be overlooked. The dose of thyroid should be 0.20 gm. (3 grains), at first three times a day for a week, then twice a day for another week, and after this once a day will probably be sufficient. To be sure that the thyroid is active, 0.25 gm. (4 grains) of sodium iodid should be administered once during each twenty-four hours. The patient may not begin to lose weight for at least two weeks, and after that some weight should be lost every week, and patients may lose weight even after the treatment has been stopped. The loss of two or three pounds a week should be considered sufficient and satisfactory. If the excessive weight is hereditary, or has persisted for years, the fat will again return on cessation of the treatment, and in these patients great loss of weight will not be caused by the treatment without the necessity for more thyroid being administered than is safe.

If undesirable fat begins to be deposited before the age of 40, unless there is a marked family tendency to such excessive weight, the thyroid is probably undersecreting. If such deposits of fat occur on the hips. over and under the clavicles, on the upper arms, around the breasts in women, with a feeling of oppression, dyspnea on exertion, and especially if menstruation has ceased, the diagnosis is absolute, that the thyroid is secreting insufficiently. If this condition just described further develops, *adiposis dolorosa* is in evidence, the only difference being that of degree and that the fatty parts are painful. The thyroid is always found to contain a large amount of connective tissue and to be subsecreting in this disease. In the rare instances of general and localized *lipomatosis* the thyroid is probably not perfectly active, although other signs of its inactivity may not be present. Thyroid will always improve the condition of the skin even if it does not inhibit the advance of the disease.

An ordinary *goiter* represents an excess of colloid material or cystic degeneration. The portion of the gland so affected is diseased and undersecreting, but the rest of the gland is generally secreting a sufficient amount for the organism so that symptoms referable to the thyroid are not present. A primary thyroid hyperactivity or hyperplasia may have been present before the colloid excess occurred.

Whether the tendency for the residents of certain regions to develop is due to an absence of sufficient iodin in the water or to some other cause has not been determined. In some regions almost all the women (women being the more susceptible) have enlarged thyroids. But few of them probably, however, show symptoms of thyroidism. Strangers, especially women, going to these regions often readily and quickly develop goiters. Removal from these regions and the administration of small doses of iodid generally quickly cause improvement. Most such patients are very susceptible to thyroid feeding, and will often quickly show symptoms of hyperthyroidism under its administration. Boiling the drinking-water in these regions has sometimes seemed to inhibit the enlargement of the thyroid gland.

Simple goiters are more frequently operated on than formerly, probably because all operations are becoming more popular, but perhaps these large glands caused greater discomfort and disturbance than was supposed. The operation is not as serious when a portion of these glands is removed as when the patient has Graves' disease, but it can never be termed a simple operation. Sudden heart failure may occur during the anesthesia, and any other operation that it is necessary to perform on a patient who has goiter should be done under the most careful anesthesia.

Many *eczemas* of early childhood are often incorrigible until minute doses of thyroid are administered. These are especially the type that occur around the orifices of the body, and when little fissures or cracks in the skin occur. The troublesome eczemas of old age often will not heal with local treatment until small doses of thyroid are added to that treatment. Sometimes the results obtained by such treatment of these patients is most satisfactory

Hysteria of the melancholic depressant type where there is apathy, unwillingness to talk, and general depression, may be improved and cured by the administration of small doses of thyroid. The border-line between this kind of hysteria and beginning melancholia is hard to determine, but the cerebral stimulation caused by thyroid will sometimes prevent the development of insanity. Whether actual melancholic insanity is benefited by thyroid is doubtful, but it certainly is a treatment sufficiently logical to be tried in every case. Dr. A. H. Peabody (*Boston Med. and Surg. Jour.*, Aug. 14, 1910), has shown that 75 per cent. of patients who die with mental disease have abnormal thyroids.

There have been various and many suppositions as to the cause of the persistent *vomiting of pregnancy*. It is certain that if the vomiting persists the patient develops an acidosis, and this cause alone may continue the condition or actually cause death. Whether it is purely reflex or whether there is a metabolic poisoning of the system of which vomiting is a consequence, it seems certain that any method that allows the mother to metabolize her food better, and eliminate the nitrogen excretory products properly, will be of benefit to her. Whether there is often or occasionally a subsecretion of the thyroid during the early months of pregnancy when vomiting is so likely to be in evidence is not known, but many instances have been reported in which the administration of small doses of thyroid has improved such a serious condition. It is certain that the thyroid will increase the nitrogenous output in the urine. It is also certain that the thyroid should hypersecrete during pregnancy. If it does not do so it is acting abnormally, and the vomiting of pregnancy may be an indicator of such subsecretion.

It is certainly advisable, when a woman has given birth to one or more children who have shown subthyroid activity, to administer to her thyroid gland substance during her next pregnancy. Such treatment is logical, and has been successful in producing healthy children. If it is inadvisable to give small doses of thyroid to a pregnant woman or if its results are unsatisfactory, small doses of iodid may be substituted, when it is decided that the patient's own thyroid is not secreting properly.

Many obstetricians now believe that one of the best treatments for *eclampsia* is thyroid. In instances in which it is successful the poisoning is probably a nitrogen poisoning, and eclampsia can occur without serious kidney defect. When a pregnant woman is found to have signs of subsecretion of the thyroid she certainly is in danger of eclampsia at parturition, and the previous administration of thyroid is certainly indicated. A dose of three grains a day, at least during the last month of pregnancy, is advisable. If eclampsia has developed, 1 gm. (15 grains) of thyroid should be given at once and repeated in two hours.

Epileptic attacks developing during some disturbance of menstruation, whether at the time of puberty or at the time of the menopause, and especially if repeated only at the times of the menstrual periods, just before or just after, or at the time when the menstrual period should occur and does not, shows that the cause has something to do with the thyroid. The thyroid gland hypersecretes normally at and before menstruation; if it does not do so, something in the system cannot work as perfectly physiologically. In the kind of epilepsy just described thyroid is the treatment. It should be administered in small doses, 3 to 5 grains, daily (the size of the dose depending on the symptoms of the physiologic action of the thyroid), during the interval between the periods. When the attack is expected, for a day or two before, bromid treatment may be added. If the thyroid acts unpleasantly, causing palpitation or loss of weight, it need not be given throughout the whole four weeks of the interval, but may be omitted during the first two weeks. Many instances are on record in which this kind of epilepsy has been cured by such treatment.

More or less complete insufficiency of the thyroid in adults causes *myxedema*. This is a rare disease in men, and occurs in more than 80 per cent. of all cases in women, and mostly in those who have borne children. It would seem from such statistical facts, that the gland is inclined to excessively atrophy because it has previously been stimulated, in women, from the periodicity of its increased secretion on account of menstruation, and from its overwork during pregnancy. Myxedema in its full development is, in this country, a rare disease. Partial myxedema, hypothyroidism, is frequent and often unrecognized. In myxedema there are all kinds of nervous disturbances and circulatory disturbances, joint and muscle pains, headaches, itching and tingling. The skin may be dry and harsh. Later, deposits of fat generally occur all over the body. The face is round, full, dull and apathetic. There is a great deposition of mucin in the tissues of the skin giving a feeling of edema but with no pitting. The taste is impaired and perverted. The patient may complain of a bitter, a sour, or some other disagreeable taste, and the digestion is impaired. The patient also may complain of noting a disagreeable odor. There is sluggish mentality, the memory is impaired, and the general disposition may be entirely abnormal to the individual. The patient sleeps a great deal, even in the daytime. There may be hallucinations, even bordering on melancholia. The temperature is generally subnormal, the pulse slow, and the blood anemic, although there may be a tendency to hemorrhages, either from the uterus, the nose, the gums, the bowels, or into the skin. One patient about 50 years old, during the incidence of the menopause, had an attack of profuse bleeding from the nostrils, ears, gums, intestines and bladder, almost to exsanguination. She was cured by thyroid feeding after every other known treatment had been administered and failed.

In myxedema the external genitalia are swollen, amenorrhea is generally present, and the sexual desire is lost. The urine often shows albumin, and may show casts. If the disease is not arrested by proper treatment death is likely to occur from progressive anemia, kidney insufficiency or cardiac weakness. The disease is slow in its progress, but death may occur in five or six years.

The almost invariably successful treatment is thyroid; all of the above symptoms disappearing. The dose should not be large, but if for any reason the treatment is rapidly pushed, the patient should be in bed lest sudden heart failure occur from the large doses of thyroid. As soon as the patient improves, the dose should not be large; a dose of 3 grains of the dried gland substance a day is sufficient, and even this may subsequently be given but every other day, or even less frequently. Sometimes the thyroid gland of such a patient may be stimulated or may recuperate, or perhaps a supernumerary thyroid may develop so that active thyroid medication is needed only intermittently.

In *operative myxedema* in which the thyroid gland has been removed totally, or so much has been removed that the secretion of the remaining portion is insufficient, or in some instances of true myxedema, in which the patient cannot live without continued thyroid treatment, transplantation or implantation of thyroid gland tissue into various organs of the body has been tried, sometimes with success. This same implantation has been tried in cretins, and there are records of success. The younger the patient, the more successful, perhaps, is the treatment, but the whole subject of such transplantation is as yet purely experimental.

Hypothyroidea and partial myxedema, easily recognized when the physician once becomes used to looking for it, is hardly recognized at all by the majority of practitioners. Any one, two or three of the symptoms above described as characteristic of myxedema may be present in a patient, and be due to a subsecretion of the thyroid. It is hardly necessary to enumerate these conditions. Suffice it to say that the unusual addition of weight, irregular fatty deposits, drying of the skin, slowing of the pulse, sleepiness, mental apathy and stupidity, gastro-intestinal disturbances that are unexplainable by organic disease, an abnormal desire for sugar, urinary defects in evidence with some of these other conditions, all point to subsecretion of the thyroid. The treatment is either small doses of thyroid, or an iodid, or both. Premature falling of the hair, or the hair becoming brittle and readily breaking, irregular and unexplainable skin eruptions, especially of the dry, scaly varieties, may many times be improved by judicious thyroid feeding. Sometimes there are joint pains, and in some instances arthritis deformans has been thought to be caused by disturbed thyroid activity, as in these instances administration of thyroid has been of marked benefit. This, however, is not generally the case.

In *cretinous children* the thyroid is either absent, or, if present, contains a small amount of colloid material or is cystic, and there is almost entire absence of thyroid secretion. The curative action of thyroid in cretinism is a demonstrated fact, and the sooner the diagnosis of cretinism is made, the greater the amount of success which will attend the use of thyroid. Unfortunately the diagnosis of cretinism can rarely be made until the child is from 6 months to a year old, and if there is not total absence of thyroid secretion, an infantile myxedema cannot be determined until the child is 2 or 3 years old. If a cretin or a patient with infantile myxedema is not treated until he is several years old the results of such treatment are much less satisfactory. The dose for an infant is not more than .065 gm. (1 grain) of the official thyroid powder, two or three times a day. If the cretin is older, the dose may be larger. Its unfavorable action would be shown by increased cardiac rapidity and loss of appetite. Its favorable action is shown by a diminution of the myxedema; in other words, the puffiness of the skin becomes less, and there is an actual loss of weight. The mental powers should increase, and the hair, nails, teeth and bones should normally grow. The thyroid feeding, as soon as improvement has positively taken place, should then be slightly diminished, and a smaller dose given daily for months and perhaps for years. If unpleasant symptoms of thyroid action occur, the thyroid should be stopped for a week and then again begun at a smaller dose.

UNCLASSIFIED USES OF THYROID

Thyroid has been used with success in some instances of hemophilia and purpura hemorrhagica, as well as in the irregular hemorrhages of the menopause.

It has been used in chronic rheumatism as well as in arthritis deformans, and has many times been successful in gouty rheumatism, especially where the attacks showed a general disturbance of metabolism, such as at one time an asthmatic attack, at another an indigestion attack, and at another a typical gouty joint attack. Small doses given for a considerable time are often successful in this kind of metabolic disturbance.

Sometimes thyroid acts as a diuretic, and it certainly is an antidote to nitrogenous poisoning in insufficient kidney action. Even uremic convulsions are sometimes kept in abeyance by the administration of thyroid. During a uremic attack the dose of thyroid should be large, as 10 grains of the dried extract three time a day. Such treatment sometimes apparently prevents convulsions, and in some instances seems to aid in saving life.

Thyroid has been used in various skin diseases, sometimes with success. The indication seems to be to stimulate extra secretion of the skin. If there is an acute inflammation or hyperemia, thyroid would not be indicated. Conditions in which it has been successful are the dry chronic eczemas, sometimes in psoriasis, ichthyosis, and in some instances scleroderma.

If not otherwise contra-indicated, whenever there is excessive connective tissue development in any organ—in other words, a sclerosis or a cirrhosis—a small dose of thyroid daily is of benefit. The dose should be so small that it could not cause evident signs of its physiologic activity. In many of these instances small doses of iodid, given daily for long periods, may be of as much benefit.

Some clinicians have certified to, and even proved, in certain instances, the value of thyroid in inhibiting or causing resorption of carcinomatous growths. This is especially true of uterine carcinoma. The majority of investigators, however, have not found this treatment successful.

THE ADMINISTRATION OF THYROID

Unless thyroid is administered in large doses to combat an intoxication or toxemia, as in puerperal eclampsia or uremia, a therapeutic dose should cause no evident symptoms. In other words, if thyroid is to be administered continuously for its continued physiologic effect it should give no more symptoms than does the normal thyroid secretion. The amount administered per day should be small enough to represent the amount that would reach the blood from a normal thyroid gland. This means in the course of twenty-four hours very little thyroid secretion. If the amount that we administer causes symptoms of thyroidism such as palpitation, hot flashes, headache and sleeplessness, or any of the other symptoms mentioned as symptoms of Graves' disease, the amount given is excessive and should be diminished. It should also be recognized that the administration of thyroid for a short time, even in small doses, will doubtless stimulate a temporarily sluggish thyroid gland to more perfect action. Consequently, a given dose not at first too large becomes gradually too large, and later not needed. It also seems to have been proved that small doses of iodin, as represented by an iodid, is a stimulant to a sluggish thyroid, and should perhaps be the treatment first given when there are evidences of hyposecretion of the thyroid. It has been shown that the thyroid may become active, if it obtains a little more iodin. If 0.10 or 0.20 gm. (1½ to 3 grains) of iodid a day does not soon render the thyroid more active, then thyroid substance should be given. The signs of excessive thyroid administration which are not as self-evident as those above mentioned are loss of appetite, loss of weight, tendency to perspire too freely, and too low blood tension.

Large doses of thyroid may cause nausea, dizziness, and, if quickly absorbed, faintness. There is probably no direct acute poisoning from thyroid, although large amounts have been known to cause convulsions and even death from shock, *i. e.*, by the toxic effect on the heart and the enormous vasodilator effect, as has been seen in operations for Graves' disease when the thyroid has been too much manipulated and a large amount of its secretion has been squeezed into the circulation.

The treatment of acute thyroid intoxication would be the hypodermatic or intravenous use of epinephrin or other suprarenal vasopressor substance, the administration of atropin and strychnin. Possibly good treatment would be a venesection from one arm while physiologic saline was transfused into the other arm.

Contra-Indications.—Any symptoms similar to those of Graves' disease should ordinarily prohibit the use of thyroid. Also, if during the administration of thyroid excessive nervousness, sleeplessness, palpitation, and loss of weight occur, the administration should be stopped. Ordinarily a poor condition of the circulation and a soft and weak pulse should prevent its use. Serious nervous and cerebral excitation should also ordinarily prevent its use.

Official Preparation.—Glandulæ thyroidæ siccæ, desiccated thyroid glands, is a yellow powder prepared from the thyroid glands of sheep. It has a disagreeable, meaty smell, and is partially soluble in water. This preparation of course contains the active principle of the thyroid gland, but its activity depends on the amount of iodin content, and this is variable. The dose varies from 0.03 gm. (½ grain) to 1 gm. (15 grains), depending on the frequency and the object for which it is used. Thyroid may also be obtained in tablets which vary in size and strength.

Unofficial Preparations.—Iodothyrin is an artificial preparation recommended by Baumann to represent thyroid substance, and occurs as a brown powder, which contains 9 per cent. of iodin and 0.5 per cent. of phosphorus. This preparation has not been found so active or so efficient as thyroid gland substance, and consequently should not be used when thyroid is indicated, provided thyroid substance can be obtained. The dose is slightly larger than that of the above official preparation.

Various antithyroid preparations may be obtained. These are of course indicated when there is too much thyroid secretion. One preparation is termed "thyroidectin," and is prepared from the blood of thyroidectomized animals. It is a reddish-brown powder, and may be obtained in capsules each of which contains 5 grains. The dose is one to two capsules, three times a day.

Moebius' antithyroidin is a serum obtained from the blood of thyroidectomized animals, the dose of which is from 2 to 10 drops, three times a day.

The milk of thyroidectomized goats may be administered fresh from the animal.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 24, 1910

RELATIVE IMPORTANCE OF BOVINE AND HUMAN TUBERCLE BACILLI IN HUMAN TUBERCULOSIS

Since Koch's sensational announcement in 1901, to the effect that human and bovine tuberculosis are not identical, and that the occurrence of bovine tuberculosis in man is so rare that no special protective measures are indicated with respect thereto, numerous investigations have been made in regard to the relationship of bovine and human tubercle bacilli. An especially valuable study of this question has been made recently in the research laboratory of the department of health of New York City.[1] Park and Krumwiede point out that it is of great importance to know as definitely as possible the actual percentage of bovine infection in man, because if bovine tuberculosis occurs to an appreciable extent steps must be taken to prevent the milk-supply, especially of large cities, from carrying tubercle bacilli. In order to contribute to the solution of the problem in question, the New York investigators have studied carefully the types of bacilli obtained from a large number of unselected cases of different types of tuberculosis and representing well the average conditions of exposure to infection. An enormous amount of work has been done and the results secured are of great value. The most improved technical methods were used.

A Merry Christmas to All! Let no one slight the ancient custom of mirth and cheer; but if there be any whose existence has grown stale—who have ceased to renew the fresh wonder of life by sharing its simple joys with children and the childlike—who have forgotten or ignored that wisdom, deeper than the learning of the schools, which makes life worth while—to such we wish a Merry Christmas in double and triple measure. This is the day of all others to observe what Stevenson called the most underrated duty in the world—the duty of happiness. Beauty for ashes, the oil of joy for mourning, the garment of praise for the spirit of heaviness—a Merry Christmas!

Park and Krumwiede conclude that tubercle bacilli isolated from man fall into two groups, the human and the bovine. Each type presents peculiar cultural and biologic characteristics, most of the cultures grouping themselves around two extremes. There is no conclusive evidence in favor of any rapid change of type. The actual number of cases examined is 436—the largest number so far covered in a single investigation; 297 occurred in persons over 16 years of age—278 being pulmonary—and of these cases only one, a case of renal infection, gave bacilli of the bovine type. Children between 5 and 16 years furnish 54 cases, nine being of the bovine type so far as the bacilli go. Eighty-four cases were in children under 5 years, and of these twenty-two had bovine bacilli.

These results are in general harmony with results obtained previously. Their cases, added to cases similarly studied and recorded in literature, give a total of 1,040 cases of human tuberculosis from which pure cultures of tubercle bacilli have been obtained and identified as either bovine or human in type. Dividing these 1,040 cases into three groups with respect to the age of the patients, we find that Park and Krumwiede place 686 cases in the first group, which comprises the patients of 16 years and over, and nine of these patients gave bacilli of the bovine type; in the second group, which covers the ages between 5 and 16, are 132 cases, thirty-three with bovine bacilli; and in the third group, which includes the children under 5, are 120 cases, fifty-nine of which are of the bovine bacillary type.

If not a single case of pulmonary tuberculosis have bacilli of undoubted bovine type been found; there are 568 cases of pulmonary tuberculosis in the first group and of these one case figures as furnishing bacilli of questionable bovine type.

The larger proportion of the cases with bovine type consists of the infections of the abdomen and of the glands of the neck. In 15 per cent. of the fatal cases in children under 5 bovine bacilli were found.

It thus becomes evident, from the results which have been briefly outlined here, that the bovine type of the tubercle bacillus plays a significant and by no means a negligible part in the etiology of tuberculosis in children and that the efforts at prevention of this disease clearly must include the sources of bovine bacilli.

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1. Park, William H., and Krumwiede, Charles, Jr.: The Relative Importance of the Bovine and Human Types of Tubercle Bacilli in the Different Forms of Human Tuberculosis, Jour. Med. Research, 1910, xxiii, 205.

WILLIAM PRYOR LETCHWORTH, REFORMER AND PHILANTHROPIST

In Mr. William Pryor Letchworth, who has just passed away at the age of eighty-eight years, the medical profession has lost a helper of unusual spirit. He stood between science and that helpless portion of the population that needs state care, and taught the people of New York State how to spend their money so as to give the best possible scientific and humanitarian aid to its dependents.

In his early life a business man, he earned a fortune, and all those who were associated with him shared his prosperity. Then, retiring from business, he devoted nearly fifty years of his life to practical philanthropy. Seldom does one find such business acumen, such scientific grasp of conditions and such brotherly love combined as salient traits in one man; and these, combined with a love of the fine arts, and the power to attract kindred souls, formed a character whose qualities strengthened the fibers of our civic life.

Mr. Letchworth was for ten years, from 1878, president of the State Board of Charities, and from that time until his death every branch of the work has felt the effect of his intelligence and persistent effort, and out of his wise administration have grown changes for the better in the care of the poor in county houses, the blind, orphan and destitute children, and juvenile delinquents.

He had always been keenly alive to the suffering and wrongs of the insane and epileptics as they were cared for in years gone by in public institutions. In order to understand the subject thoroughly, he spent two years in Europe, visiting institutions and hospitals in every country, and when in 1886 he was appointed chairman of a commission to select the site for an asylum for the insane in northern New York, he not only chose what experts pronounce to be the finest site for such an institution in this country, but suggested many ideas which led to improvement in the comfort of the patients.

Perhaps the work with which his name will always be most intimately associated is Craig Colony for Epileptics, which grew practically out of his ideas. Imbued with the ideas of Bielefeld, Germany, where the epileptic lives a useful life in a village of epileptics, Mr. Letchworth guided the state in establishing in the Genesee valley that remarkable community, composed wholly of epileptics and their helpers, who live in a model colony, doing farm and garden work, housework, brick-making, and learning and practicing the trades needed in village life.

The value of a work like Mr. Letchworth's lies in its power of coordinating other men's work. He was like the expert critics employed by great business concerns to detect wasteful and inefficient methods, and substitute time-saving and labor-saving systems. The philosopher, who criticizes the lack of coordination in the loose business of life, does great service to his generation; but rarely does one meet a philosopher who leads the way to practical reform. This was what Mr. Letchworth did for his state in every public enterprise that had to do with the unfortunate. He found out how to remedy existing evils, and then applied his brains and his fortune to making needed reforms go through.

"THERE'S A REASON"

Grape-Nuts is a breakfast food and Postum Cereal is a substitute for coffee, both manufactured by the Postum Cereal Company, Battle Creek, Mich. This concern has applied the "patent medicine" methods of advertising to the exploitation of food products. Are you threatened with appendicitis? Use Grape-Nuts! Have you "heart trouble and dizzy headaches?" Try Postum Cereal! Do you suffer with "loose teeth?" Eat Grape-Nuts! And so on. Not, of course, that the recommendations are so crudely made as those just given. In fact, like most "patent medicine" advertising, the most dangerous and mendacious claims are those made by implication. For instance, the company does not say frankly that Grape-Nuts is a "brain food"; not at all. Instead: "No one, until the inventor of Grape-Nuts, thought of making a special food for the brain and nerves." It is probable that the Postum Cereal concern has in its advertisements given greater publicity to more pseudo-scientific twaddle than was ever before inflicted on a long-suffering but patient public. But "There's a Reason." It has sold the goods!

Five years ago *Collier's Weekly* refused to accept the advertising of the Postum Cereal Company on the ground that the products were being exploited by "patent medicine" methods if not actually as "patent medicines." In July, 1907, that publication called attention to the following statement made by the Postum concern:

> "It is a practical certainty that when a man has approaching symptoms of appendicitis, the attack can be avoided by discontinuing all food except Grape-Nuts and by properly washing out the intestines."

Collier's characterized such claims as "lying and, potentially, deadly lying." The manufacturer, as a "come-back," had advertisements printed all over the country accusing that publication of attacking his product "for the purpose of forcing him to advertise." As this practically amounted to charging *Collier's* with attempting to blackmail the Postum Cereal Company into advertising, the owner of that weekly at once brought suit for libel. The verdict that has just been returned in Mr. Collier's favor is said to be the largest ever rendered in a libel suit in this country.

Collier's is to be congratulated. It is a common thing for the manufacturers of "patent medicines" and similar products, when their preparations or methods are criticized, to intimate that the journals exposing them have had an ulterior motive in so doing. It is seldom, however, that such manufacturers are so commercially tactless as to make their charges definite, and in black and white.

The Postum Cereal Company, which is said to spend a million a year in advertising, is attempting to offset the result of the verdict by an advertising campaign in which the actual cause of the suit is carefully kept in the background while the points regarding the products themselves are greatly magnified. As a matter of fact, the products, as such, did not enter into the case at all, the methods of exploitation and the claims made for them being the essential matter.

Why does not the Postum Cereal Company explain that the Food and Drugs Act has made it necessary for it to modify the claims made on the Grape-Nuts package? Why does it not mention that some of its testimonials have been rewritten and paid for? Why does it carefully conceal the fact that the "famous physician" who wrote the Postum testimonial is a "poor old broken-down homeopath, who is now working in a printer's establishment" and who received ten dollars for it? These are points that the public is entitled to know so that it may place a just estimate on the worth of the testimony offered. Why is the Postum Cereal Company silent? Well, again: "There's a Reason."

THE DEPARTMENT OF AGRICULTURE AND ITS WORK

When a Department of Agriculture was proposed, nearly twenty-five years ago, exactly the same objections were raised to its establishment that are now being made to the organization of a federal department of health, except that, as no great fortunes were being made by selling nostrums and cure-alls to or for cows, horses, pigs and chickens, the opposition to the establishment of a department of agriculture did not come from quacks, fakers and swindlers. With this exception, however, the objections were the same: the rights of the state were being invaded; the government was taking up work which did not belong to it; the project was simply an excuse for the expenditure of large sums of money; the people did not approve of it; its establishment would be of no value, etc., etc. The manifold and highly valuable activities of the United States Department of Agriculture at present constitute a striking refutation of the objections made to its establishment. A copy of Circular No. 721 of the Department of Agriculture shows the bulletins, circulars and reprints issued by the Department in the single month of November, 1910. These publications are of interest not only to the farmer but also to the farmer's wife and children, and in many cases, to the entire community. In the list are found such topics as these: some insects injurious to forests; life-history of the codling-moth; field studies of the crown-gall and hairy-root of the apple-tree; experiments in blueberry culture; insects which kill forest trees, character and extent of their depredations and methods of control; directions for the use of black-leg vaccine; a review of some experimental work in pig-feeding; the tapeworms of American chickens and turkeys; tuberculosis of hogs, its cause and suppression.

Twenty-five years from now, when the United States shall have taken its place with other civilized nations in public health work and when the federal government has come to recognize officially the fact that the life of a human being is as much a matter of government concern as the life of domestic animals, we shall probably have a national Department of Health issuing a monthly list of publications with titles something like these: some parasites injurious to school children; life-history of the typhoid bacillus; field study of infantile poliomyelitis; experiments in child culture; bacteria which kill factory employees, character and extent of their depredations and methods of control; directions for the use of typhoid vaccine; a review of some experimental work in infant-feeding; the tapeworms of American citizens; tuberculosis of children, its cause and suppression.

Such work will bring even more benefit to the people in the next twenty years than the splendid work of the Department of Agriculture has secured in the past twenty years.

Current Comment

OPTOMETRY BILLS IN STATE LEGISLATURES

Legislatures in thirty-two states will convene the first week in January. In about eighteen of these states, according to the statements made in "optometry" publications, bills providing for the appointment of boards of examiners in "optometry" will be introduced, on the plea that they are intended for the protection of the public against incompetent and untrained spectacle fitters and will supplement medical practice acts. The plan of campaign usually followed by the promoters of these bills is to secure, before the bill is introduced, the endorsement of as many physicians as possible, and then to assert before legislative committees that the bill "has the endorsement of the leading physicians of the state."[1] If the real purpose of the bills was to require a higher standard of training and education among *opticians*, there would be no objection to them, provided schools of instruction for opticians were properly supervised. Experience in every state in which these bills have become laws, however, has shown that as soon as the "optometrist" received the sanction of the state, in the form of a license, he immediately placed himself before the public as a "Doctor of Optometry" and as one competent, not only to correct errors of refraction by lenses, but also to treat any diseases of the eye, no matter what the cause. With the development of this business a number of purely commercial "schools" have sprung up, many of them diploma mills, giving "correspondence courses." These "colleges" are turning out large numbers of "graduates." Instead of being a movement for the protection of the eyesight of the people, as claimed by its supporters, it has become a campaign for the recognition, by the state, of a horde of uneducated, untrained men, who, under the title of "Doctors of Optometry" claim to be competent to treat all diseases of the human eye—a work which to-day requires not only a complete course in modern medicine, but special and additional training as well. This pernicious legislative crusade should be opposed by physicians everywhere and the real facts should be placed before the legislatures and the public. Especially should physicians refrain from signing petitions or endorsing bills without realizing their true import. This caution is particularly necessary at present in view of the activity of the advocates of these measures.

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[1] See page 2253, this issue.

THE NEW CHILDREN'S JOURNAL

An announcement was recently made in these columns concerning the new journal to be published by the American Medical Association—the *American Journal of Diseases of Children.*[1] The initial number is now on the press and will be issued promptly on the first of the year. In its articles, in the character of its editorial board and in its mechanical features, this journal will be the equal and a worthy companion of the other special journal published by the American Medical Association, *The Archives of Internal Medicine.* It is not a commercial enterprise—it is merely another effort of the Association to advance scientific medicine, and especially scientific medicine in America. Already an encouraging number of subscriptions have been received for the new journal. One progressive physician in sending in his subscription says: "I take great pride in the *Archives of Internal Medicine,* in The Journal of the American Medical Association and in other publications coming from your press, and I want your baby book from the start." In order that his file of the new journal may be complete, every physician who contemplates taking it should likewise begin his subscription with the first issue, and thus avoid the annoyance of ordering back numbers, which are not always easily supplied.

MEDICAL ADVERTISING IN LAY JOURNALS

As has often been said—and truthfully—printer's ink is the life-blood of quackery. Debar the advertisements of medical charlatans from newspapers and magazines and these frauds would become a negligible evil. To physicians who know the falsity of the quack's claims, the cruelty of his promises and the fraudulence of his methods, it is an ever-present wonder how reputable and honest publishers can accept the advertising of the nostrum monger and the quack. In many cases there is no doubt that newspaper and magazine owners purposely close their eyes to the evils of this kind of advertising copy because of the enormous revenue it brings in. In many more cases, however, the advertisements are accepted in good faith and in the belief that the claims made, while doubtless exaggerated, are not more so than those made by advertisers in other lines of business. These remarks are prompted by looking at two pages from the *Agricultural Epitomist* sent us by a correspondent. On one of the pages is a half-page advertisement of as bold and impudent a medical swindle as often appears. It deals with "Professor Samuels," whose methods and claims are discussed in the Pharmacology Department[1] of this issue. On the other page is an editorial comment under the heading "Advertising Talks" in which the following statement occurs: "You know advertised articles are all right because they have stood the test—and besides, the advertisers are backed by your publisher's guarantee." To physicians it may seem unthinkable that a rational human being could honestly be willing to "guarantee" such a fake as the Samuels "treatment" of all diseases "through the eye." Yet we believe it is done in good faith. Samuels doubtless submitted to the publisher a bushel or two of testimonials and to the lay mind a testimonial carries with it a conviction that no amount of argument can overthrow. We believe that in this case, as in many other similar ones, what the publisher lacks is judgment rather than principle.

RECOMMENDATIONS OF THE SURGEON-GENERAL OF THE NAVY

The annual report of the Surgeon-General of the United States Navy, recently issued, forms a volume of nearly 200 pages and reviews the work of the Bureau of Medicine and Surgery for the past year. The substance of the report is found in the twenty-one recommendations which form its conclusion. Many of these relate to purely technical matters connected with the administration of the Navy, but some of them are of general medical and scientific interest. Among the recommendations are: that the ability to swim well be required hereafter as a prerequisite for officers and men in the Navy and Marine Corps; that a naval medical reserve corps be established; that dentists commissioned as officers of the lower grades be provided; that venereal prophylaxis, as practiced in Asiatic and Atlantic fleets, be enforced throughout the entire service, both ashore and afloat; that vaccination against typhoid fever be extended to the entire personnel of the Navy under the age of 50 years; that the bubbling-spring device for drinking-fountains be adopted for the entire service; and that Congress be asked for an appropriation to build two suitable hospital ships. The report contains much interesting material, including condensed reports from naval medical officers in all parts of the world.

Differential Diagnosis of Syphilis and Psoriasis.—During the course of an eruption of psoriasis it is not unusual to find lesions on the penis, glans, and scrotum, in men, and on the vulva in women. The lesions in these situations are atypical owing to the moisture of the parts, the scales being soft and fragile, not hard, dry, or scaly, as in ordinary psoriasis. These lesions may be mistaken for mucous syphilides, but the presence of patches of typical psoriasis on the knees, elbows, etc., will settle the diagnosis.—C. F. Marshall, in the *Practitioner.*

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[1] See advertising, page 37.

[1] Page 2248.

Medical News

ARKANSAS

The New Sanatorium.—The new Arkansas Tuberculosis Sanatorium, Booneville, is nearly filled to its capacity. At the beginning of the month there was room only for ten additional patients. The capacity of the institution is 74.

Suggest Removal of Hospital.—The board of trustees for the State Charitable Institutions will, it is reported, recommend to the governor and legislature the removal of the State Hospital for the Treatment of Nervous Diseases from Little Rock.

County Election.—At the annual meeting of the Prairie County Medical Society, held in Hazen, Dr. James C. Gilliam, Des Arc, was elected president; Dr. H. T. Rhodes, vice-president; Dr. James Parker, Devall Bluff, secretary, and Dr. William W. Hipolite, Devall Bluff, treasurer.

Antituberculosis Society Organized.—The Antituberculosis Society of Jefferson County was organized at Pine Bluff, December 1. J. L. Caldwell presided at the meeting and Ephraim Frisch acted as secretary. Drs. John S. Jenkins, William S. Stewart, William H. Blankenship, all of Pine Bluff, make up the committee for medical aid.

GEORGIA

Ambulance for Hospital.—The Atlanta *Georgian* gave a benefit performance at the Grand Opera House, December 23, the proceeds of which are to be applied to the purchase of an automobile ambulance for the Grady Hospital.

Physician Imprisoned.—For failure to pay the fine of $1,000 imposed on him in the Chatham Superior Court for illegal prescription of cocain, Dr. Walter W. Lee, Savannah, is said to have been committed to jail, November 25.

Money for State College.—Citizens of Augusta have subscribed $27,845 for new buildings for the Medical College of Georgia, Augusta, and for the hospital connected with the institution. The citizens have agreed to raise $50,000 toward the new buildings. A mass meeting was held in Augusta, December 11, to promote this worthy object.

Personal.—Dr. Howard J. Williams, Macon, has been appointed a member of the advisory board of the Southern Health Conference.——Dr. Thomas J. Collier Griffin, who was operated on recently in Atlanta, is reported to be greatly improved.——Dr. John P. Atkinson, Milledgeville, has been appointed councilor of the Sixth District Medical Society, vice Dr. T. Ellis Drewry, Griffin, resigned.

ILLINOIS

Hospital Site Donated.—Walter Farwell, Lake Forest, has donated to the recently organized Lake Forest Hospital Association an acre of land for a site for the hospital to be erected next spring.

Personal.—Dr. George M. French, Peoria, has been appointed supreme medical director of the Court of Honor, vice Dr. James E. White, deceased.——Dr. Robert C. Bradley, Peoria, has been reelected physician of Peoria County.——Dr. E. E. Nystrom has been named assistant physician of Peoria County.

State Board and Anterior Poliomyelitis.—The September issue of the Bulletin of the State Board of Health is devoted to the consideration of acute poliomyelitis, and includes articles by Dr. Israel Strauss, New York City, on "Pathology;" by Dr. Simon Flexner, New York City, on "Experimental Poliomyelitis;" "A Review of the Literature of 3,523 Cases," by Dr. Frank E. Coulter, Omaha; "Acute Poliomyelitis," by Dr. J. S. Fowler, Edinburgh, Scotland; "Surgical Treatment of Infantile Paralysis," by Dr. Max Herz, Sydney, Australia, and "Reports of Epidemics," by Drs. John M. Armstrong, St. Paul; Colin K. Russel, Montreal, and C. A. Anderson, Stromsburg, Neb.

Chicago

Personal.—Dr. Frank Allport is spending several weeks in New York and other eastern cities studying the work done in the various eye and ear hospitals.——Dr. Oscar C. Willhite has resigned as superintendent of the Cook County Institutions.

Dr. Holt in Chicago.—Dr. L. Emmett Holt, professor of diseases of children in the Medical Department of Columbia University, New York City, gave the annual address before the Chicago Pediatric Society, December 17, on "A Study of 300 Cases of Acute Meningitis in Infants and Young Children."

Resolution on Illinois State Board of Health.—The secretary of the Illinois State Board of Health recently requested the Chicago Medical Society to investigate the charges which had been made against the state board. The council decided that it had no official jurisdiction over the State Board of Health or its members and adopted the following resolution:

> *Resolved*, That it is the sense of the council of the Chicago Medical Society that any official action on its part on the question of the attacks made on the state board would be undignified and unjustified by the powers of this body, as well as an implied reflection on the state board, which would be unwarranted by any evidence thus far submitted against said board.

INDIANA

Charges Against Physician Dismissed.—The State Board of Medical Examination and Registration, at its meeting in Indianapolis, December 6, dismissed for want of sustaining evidence, an affidavit filed against Dr. George M. Freeman, Shoals, in which he was charged with criminal practice.

Prevention of Ophthalmia of the Newborn.—A number of physicians of the state met December 15, at the office of Dr. John N. Hurty, secretary of the State Board of Health, and decided to support a bill requiring compulsory treatment of the eyes of all infants at birth by physicians and midwives. The draft of a bill for that purpose was intrusted to a committee composed of Drs. John N. Taylor, Crawfordsville; Moses S. Canfield, Frankfort; E. Grove Anthony, Indianapolis, and George F. Keiper, Lafayette.

Antituberculosis Propaganda.—The Indianapolis Board of Health, to arouse interest in the scientific methods of prevention of tuberculosis, arranged a mass meeting, December 12. Dr. Charles O. Probst, Columbus, secretary of the Ohio State Board of Health, delivered the principal address, illustrated with stereopticon views, which showed the different stages of the malady, methods of stamping out the disease, and also illustrations of the open-air school rooms which are in successful operation in many large cities. The mayor presided and addresses were delivered by Dr. Charles S. Woods, city sanitarian, and others.——The Indiana Branch of the American Red Cross Society has built several cottages at the Indianapolis City Hospital Tuberculosis Colony, and similar cottages in other cities in the state, and has also assumed charge of twenty-five individual tuberculosis cases.

MARYLAND

Baltimore

Well-Known Chemist Dies.—Mr. Louis Dohme, head of the firm of Sharp and Dohme, manufacturing chemists, died in Baltimore, December 12, from neuritis, aged 72. He was a graduate of the Department of Pharmacy of the University of Maryland.

The Johns Hopkins Fund.—The Johns Hopkins Fund now amounts to $610,495. In order to secure the $250,000 offered by the General Education Board of New York, it is necessary to increase this amount to $750,000 by January 1. The money raised is intended to meet the expenses of new buildings, and the removal of the institution to the surburban site at Homewood.

New Staff of Bayview.—The reorganization of the Medical Department of Bayview will take effect January 1. Dr. Thomas R. Boggs has been appointed physician-in-chief; Dr. Arthur M. Shipley, surgeon-in-chief; Dr. Gordon Wilson, physician-in-chief of the Tuberculosis Hospital; Dr. H. D. Purdon, physician-in-chief of the Hospital for the Insane, and Dr. Milton C. Winternitz, pathologist-in-chief.

Personal.—Dr. Caleb W. G. Rohrer has been elected a member of the Royal Society of Arts, London.——Dr. Thomas R. Boggs has resigned as resident physician of Johns Hopkins Hospital and Dr. Frank J. Sladen has succeeded him. Dr. Franklin Webb Griffith, first assistant gynecologist, has resigned and has been succeeded by Dr. John A. Sperry.——Dr. William J. Schmidt has been appointed assistant bacteriologist to the health department, vice Dr. Frederick V. Beitler, Halethorp, resigned.

MISSOURI

Acquitted of Assault.—Dr. Thomas J. Massey, Lockwood, charged with assault on a stockman of that place, was acquitted by a jury, December 2.

Adopts Firework Ordinance.—An ordinance has been passed by the city council of Kansas City prohibiting the use of fireworks in that city except at public exhibitions which are to be regulated under special permits.

Drinking Cups to Go.—The Board of Education of Kansas City, at its regular meeting, December 1, voted to abolish drinking cups in the ward schools. Bubbling fountains are to be installed to take their place.

Seek New Location for Tuberculosis Hospital.—Because of the inadequate supply of drinking water and the absence of sewerage facilities at the Buchanan County Farm, the county court has decided not to permit the location of the proposed tuberculosis hospital at that place. The president of the local antituberculosis society has been advised of the decision.

St. Louis

Hospital Completed.—The directors of the Barnard Free Skin and Cancer Hospital (St. Louis Skin and Cancer Hospital) announce that the new hospital has been completed, and that formal dedicatory exercises and inspection were held December 20.

Vaccine Virus Pure.—The report of the city bacteriologist and Dr. George Dock of Washington University states that the investigators examined forty-five tubes of vaccine virus, and found nothing to justify the charge that three cases of tetanus among school children had been due to the virus.

St. Louis Medical Society Election.—The annual election of the St. Louis Medical Society, November 25, resulted as follows: president, Dr. Robert E. Schlueter; secretary, Dr. Frederick C. E. Kuhlman; councilors, Drs. Carroll Smith, John McH. Dean and Joseph Grindon, and delegates to the state association, Drs. J. Henry Amerland, William W. Graves, George Homan, Cyrus E. Burford, Vilray P. Blair, Richard H. Fuhrman, Robert M. Funkhouser, Albert F. Koetter and Clarence M. Nicholson.

KENTUCKY

Personal.—Dr. Dunning S. Wilson, director of the Louisville Tuberculosis Dispensary for three years, has been elected to succeed Dr. A. M. Foster as medical officer of the tuberculosis sanatoria of Louisville at Hazelwood and Waverly Hills. This will place Dr. Wilson in control of the entire tuberculosis work of the city.——The following physicians of Paducah have been elected to office: Dr. H. P. Lynn, city physician; Dr. R. L. Fisher, meat and milk inspector, and Drs. Benjamin F. Bradbury and James T. Reddick, members of the board of health.

New Vital Statistics Law.—The new vital statistics law for Kentucky goes into effect January 1. Dr. W. Lucian Heizer, New Haven, has been appointed state registrar with headquarters at Bowling Green. Announcement has been made of the appointment of registrars for the various magisterial districts in Jefferson County. Dr. William E. Gary, the milk and dairy expert of Louisville, now connected with the city health department, will be the Louisville registrar. Dr. Benjamin W. Smock, county health officer, will have general supervision over the various registrars in the county.——Undertakers will hereafter receive burial permits from the registrar instead of from the health office as formerly. The registrar will receive 25 cents for each permit issued.——Physicians will receive 25 cents for each birth and death return.——County registrars will report at stated intervals to the state registrar, who will file the reports with the county clerk, to be kept in a fire-proof vault in his office. The county clerk is to receive a fee of 50 cents for each certified copy of a birth or death certificate. Registrars must deposit fees with the county treasurer, who will make payments once a year, by order of the fiscal court, on a voucher to be made out by the state auditor.

NEW YORK

Personal.—Dr. Clayton K. Haskell, surgeon-in-chief of the State Soldiers' and Sailors' Home, Bath, resigned, December 10.——Dr. Bradley F. Many, Port Jefferson, while making a professional call early in the morning of December 5, narrowly escaped death from exposure in a blinding snowstorm.

Health Lecturers Appointed.—State Health Commissioner Eugene H. Porter has appointed Dr. H. L. Wheeler of New York and Dr. W. A. White of Phelps as lecturers and consultants on oral hygiene to the State Department of Health. Drs. Wheeler and White with the medical officers of the state department will deliver a series of lectures throughout the state on various subjects pertaining to public health.

New List of Reportable Diseases.—The list of diseases that should be reported to the State Department of Health has been amplified and now includes the following: anterior poliomyelitis, anthrax, bubonic plague, cancer, cerebrospinal meningitis, cholera, diphtheria, hydrophobia, leprosy, measles, ophthalmia neonatorum, pellagra, pneumonia, scarlet fever, small-pox, tetanus, pulmonary or laryngeal tuberculosis, typhoid fever, typhus fever, whooping cough and yellow fever.

New York City

Personal.—Dr. Abraham Jacobi has received the honorary degree of M.D. from the University of Bonn, from which he obtained his first degree fifty-nine years ago; he has also been elected an honorary member of the Medical Society of Berlin on the occasion of its semi-centennial celebration.——Dr. Eugene L. Fisk, medical director of the Provident Saving Life Assurance Society, has been elected secretary of the organization.

Verdict Against Physicians.—An unusual case has just been heard before the Queens County Supreme Court, where action was brought against Drs. Pedro Francko and T. Grover de la Hoyde for performing an unauthorized autopsy on the body of a woman who died in St. Joseph's Hospital. The action is said to have been undefended and the jury rendered a verdict of $8,000 damages. It is stated that this is the first case of its kind tried in this state.

Hospital Bureau of Standards and Supplies.—The executive committee of this organization has presented the first annual report for the fiscal year ended September 30, 1910. This bureau was established under an agreement to which at the present time about fourteen of the largest hospitals in the city are parties. The object of the bureau is standardization and savings in the purchase of hospital and institutional supplies. The result of their first seven months' work confirms the soundness of the principle on which this organization was founded, namely, that standardization and combination in purchasing are of benefit to hospitals as well as in the business world. Very considerable savings have been effected on purchases made under agreements negotiated by the bureau. As time goes on and more institutions enter the membership, the usefulness of the bureau will become more evident. The committee confidently recommends the bureau to hospitals which have not already become affiliated. There is also a non-resident membership contemplated for hospitals outside of the city of New York.

NORTH CAROLINA

Personal.—Dr. William P. Ivey, Lenoir, was seriously injured in a runaway accident, December 8.——Dr. Buxton B. Williams, Greensboro, has had plans prepared for a three-story sanitarium.

The Betterment of Professional Conditions.—The State Board of Health and the State Board of Medical Examiners have organized a joint committee which is conducting a vigorous campaign for the betterment of professional conditions in the state. Dr. Richard H. Lewis, Raleigh, and Dr. George G. Thomas, Wilmington, represent the State Board of Health, while the State Board of Examiners is represented by Drs. Lewis B. McBrayer, Asheville, Benjamin K. Hays, Oxford, and James L. Nicholson, Richlands. Dr. McBrayer is secretary of the joint committee. An active canvass is being made to secure additional enactments providing for higher educational requirements of prospective students of medicine, the repeal of the clause in the present medical law which permits licensing of illiterate doctors for "limited districts," and increased appropriations to render more efficient the work of the State Board of Health.

OHIO

Returned from Europe.—Drs. Henry J. Gerstenberger and Harry B. Kurtz, Cleveland, have returned from Europe.——Dr. L. Loring Brock, Washington Court House, who has been in Europe for several months, sailed for home, December 10.

Personal.—Dr. Paul Bethards, Toledo, has been elected fleet surgeon of the Interlake Yachting Association.——Dr. Claude E. Hoover, Edgerton, has been appointed surgeon for the Lake Shore System at Cleveland.——Dr. John Costello, Sidney, has been selected as superintendent of the new tuberculosis hospital at Lima for Shelby, Allen, Auglaize, Mercer and VanWert Counties.——Dr. John C. George, first assistant physician at Dayton State Hospital, has resigned and will practice in Lima.——Dr. David Gillard, Port Clinton, has resigned as local surgeon for the Lake Shore System, and has been succeeded by Dr. Howard M. Montgomery.——The office of Dr. Ezra Burnett, Delphos, was damaged by water in a fire, December 2.——Dr. John J. Thomas has been appointed a member of the health board of Cleveland, vice Dr. Edward F. Cushing, resigned.——Dr. Ira E. Seward has succeeded Dr. Henry Baldwin as health officer of Springfield.

Ill and Injured.—Dr Clifford T. Okey, Columbus, is seriously ill in Mount Carmel Hospital with pneumonia——Dr David M. Smith, Newark, slipped on an icy pavement, December 3, breaking his right leg above the knee——Dr. John W Alexander is reported to be seriously ill at his home in Newark——Dr Renwick H. Montgomery, Youngstown, is reported to be critically ill as the result of cerebral hemorrhage——Dr P Letherman, Outville, sustained severe cuts on the head in a collision between his buggy and another carriage at Pataskala, December 3——Dr August Schumacher, Hamilton, who has been seriously ill with ptomain poisoning, is reported to be convalescent——Dr Elmer C Radenbaugh, West Salem, who underwent operation in Wooster City Hospital a few weeks ago, has recovered and resumed practice——Dr Upton M Carnes, Canton, is said to have been adjudged insane and ordered to be committed to the Massillon State Hospital

The Oxford Liquor Case—Dr Hugh M Moore, banker and druggist of Oxford, charged by the president of Miami University with having sold the liquor which figured in a Thanksgiving poker party given by students, is said to have been found guilty in the mayor's court, and fined $50 and costs The court found no fault with the defendant for having a prescription for liquor nor for having it filled in the store *in which he was part owner* The court held that the violation of the law was in the defendant having filled the prescription when he was not a druggist or pharmacist within the meaning of the code, which gives the following definition "one who has practiced pharmacy for a period of four years, or has received an equivalent training or has been examined by the State Board of Pharmacy of Ohio" The defendant's testimony was to the effect that the registered pharmacist employed in the store was absent when he filled the prescription A motion has been filed for a new trial.

Cleveland

Dance for Charity—From a ball in the Colonial Club St Vincent's Charity Hospital, Cleveland, received over $5,000

Endowment for Medical Library—By the will of the late Dr Rosenwasser, a bequest of $10,000 was left to the Cleveland Medical Library. The proceeds are to be used in purchasing medical books and periodicals Dr Rosenwasser also left his library for the use of the association

Agreement Regarding Milk—Because farmers who have had milk refused by one city have been accustomed to ship it to another city, the departments of health of Cleveland Cincinnati, Pittsburg, Columbus, Youngstown, Lorain and Akron, cities which draw their milk from the same territory, have agreed that no milk or cream refused by any city represented because of faulty conditions at the dairy or any violation of the conditions imposed by the codes of these cities, shall be accepted by any of the other cities represented

Robb Memorial Services—Memorial services were held recently for Mrs Isabel Hampton Robb The plan announced was to provide a memorial hall to serve as headquarters of the various organizations for trained nurses of the city, containing an auditorium, library offices, restaurant and living accommodation Dr Charles F Hoover announced that the $6,000 already subscribed will be used as a fund for lectures to be delivered before nurses by medical men, and for popular lectures on hygiene for mothers and children Dr William H Welch, Baltimore, paid a glowing tribute to the memory of Mrs Robb who he said, probably did more than any other one person in reforming and organizing the profession of trained nurse.

Cincinnati

Honan in Cincinnati—Dr J H Honan, Bad Nauheim, Germany, formerly president of the Anglo American Medical Society, Berlin addressed the Cincinnati Academy of Medicine recently on 'Weak Heart, Its Causes and Treatment"

Personal—Dr E Otis Smith has been appointed cystoscopist and Dr O V Huffman, curator to the Cincinnati Hospital——Dr Edward A Fox, for many years staff physician of the Hamilton County Infirmary, has resigned

Department of Health Reorganized.—The Cincinnati Department of Health has reorganized under seven subdepartments, to be known as those of the board of health, health officers, medical inspection and relief, schools, infectious diseases, outdoor relief and tuberculosis At the head of each of the last five divisions will be an officer who will devote his entire time to the work

Elections.—The Cincinnati Society for Medical Research, at its annual meeting, December 1, elected the following officers president, Dr William Wherry, vice-president, Dr. Simon P. Kramer, secretary treasurer, Dr. Jacob L Tuechter, and executive committee, Drs Paul G Woolley and Irving Fisher.——At the annual election of the Cincinnati Polyclinic and Postgraduate School the following officers were elected: president, Dr Charles T. Souther; vice president, Dr. Adolf F. Morgenstern, secretary-treasurer, Dr Oscar W. Stark, and director of clinics, Dr. Albert E Hussey.

PENNSYLVANIA

Medical Club Election—At the annual meeting of the Oil City Medical Club, held December 1, the following officers were elected· president, Dr John L Hadley; vice president, Dr Winnie K Mount; secretary, Dr. Sylvester W. Sellew, and treasurer, Dr Frank B Jackson

Personal—Dr Edward Martin, the newly elected professor of surgery at the University of Pennsylvania, represented that institution at the annual banquet of the Colorado alumni at Denver on December 17 and at the banquet of the Pacific Southwest alumni at Los Angeles December 22——Dr. Thomas Veiel, of Stuttgart, Germany, and Dr William F. Blake, of San Francisco, have been visitors to Philadelphia during the present week

Annex for Tuberculosis Hospital.—The College Club of Pittsburg, on November 30, held a meeting in support of the project of establishing a tuberculosis annex of the Woman's Hospital for tuberculosis patients The proposed annex will provide five rooms for private patients, two of which are to be at the disposal of the College Club The cost of the new annex is estimated at $5,000 Donations and pledges amounting to $1 200 have already been received

Fine for Munyon.—December 16, the Munyon Homeopathic Home Remedy Company is said to have paid a fine of $600 imposed by Judge McPherson in the U S District Court, for misbranding certain "specifics" Special agent Jenkins of the government food and drug bureau, Dr Rudderman, of Nashville, Tenn, a government analytical chemist, and other government officials analyzed Munyon's Asthma Cure, Munyon's Blood Cure, the Munyon's Special Liquid Blood Cure, etc, the latter claiming to cure any number of blood affections Dr Edward M Gramm, a homeopath, testified that the remedies contained nothing that would effect a cure of the ills advertised on the labels

Philadelphia

Officers Elected.—The annual meeting of the Philadelphia Medical Examiners' Association was held and the following officers were elected president Dr A J Gaillard· vice president, Dr Francis S Ferris, secretary, Dr. Joseph D Farrar, and treasurer, Dr George D Morton——At a meeting of the West Philadelphia Medical Association, held December 5, the following officers were elected for 1911 president, Dr. Hiram L Lutz, vice president, Dr Charles P Pike, corresponding secretary, Dr Harry G. Hudson, financial secretary, Dr. William Miller, and treasurer, Dr Edmund L Graf——At the quarterly meeting of the Physicians' Motor Club of Philadelphia, on November 22, the following officers were elected· president, Dr Sigmund L Gans, vice presidents, Drs. L. Webster Fox, S Solis Cohen, and Edward E Montgomery; secretary, Dr. Sylvester J Deehan, and treasurer, Dr. James G Taylor.

SOUTH CAROLINA

Personal—Dr William J Burdell, Lugoff, has been made medical secretary of the Southern Division of the Esperanto Association of North America——Dr. Jesse F. Cleveland, Spartanburg, was seriously injured in a collision between a carriage and a passenger train, recently

Statue for Marion Sims.—The State Medical Society has started a movement to erect on the State House grounds, Columbia, a statue of Dr J Marion Sims. The proposed monument is to cost $10,000, of which the medical society will furnish $2,500, and the legislature will be asked to contribute $5,000

TENNESSEE

Personal.—Dr John B S Woolford, Chattanooga, has returned from abroad——Dr. Henry L Williford, Memphis, while being held up by a negro highwayman, November 23, killed the robber by cutting his throat——Rev. William Kelly, Nashville, for the past ten years a medical missionary in China, is visiting his home

Prevention of Blindness—The exhibit for the prevention of blindness *from the Russell* Sage Foundation has been shown in Memphis, Jackson, Humboldt, Nashville and Chattanooga. It was secured through Dr. Elizabeth C. Kane, Memphis, chairman of the Health Department of the Tennessee Federation of Women's Clubs.

TEXAS

Personal.—Dr. William M. Brumby, Austin, has resigned as state health officer and president of the State Board of Health to become medical director of the Equitable Life Insurance Company of Texas, San Antonio.——Dr. Ralph Steiner, Austin, has been offered the position of state health officer vacated by the resignation of Dr. William M. Brumby.——Dr. Charles P. Brewer, Fort Worth, narrowly escaped death in a fire which did about $8,000 damage to his property in Fort Worth recently.——Dr. C. C. Green has succeeded Dr. Frank R. Ross as assistant health officer of Houston.——Dr. E. E. Best, Cameron, has been appointed health officer of Milam county.——Dr. W. S. Winter, Jr., has been appointed assistant post surgeon of Port Arthur.

GENERAL NEWS

Examination for Anatomists.—The United States Civil Service Commission announces examinations Jan. 18, 1911, at various places throughout the United States to secure eligibles from which to make certification to fill a vacancy in the position of male anatomist at $1,600 per annum in the Army, medical museum, office of the surgeon general, and vacancies requiring similar qualifications as they may occur. Application should be made either to the United States Civil Service Commission, Washington, D. C., or to any local board of examiners.

Report of the Surgeon-General of the Navy.—The annual report of the Surgeon-General of the United States Navy, Chief of the Bureau of Medicine and Surgery, to the Secretary of the Navy for the fiscal year of 1910, shows a generally diminished damage ratio from disease, injuries, invalidings, and deaths as compared with the previous year and the average of the previous decade. The death rate of 5 per 1,000 is lower than has been previously recorded. The total admission ratio dropped from 725.36 to 698.25; the ratio of daily average of patients from 29.10 to 28.52; the average number of sick days for each individual from 10.56 to 10.41, and the ratio of total discharges from disability from 35.49 to 30.59. The total damage from disease alone in percentage of sick was 3.952, which is lower than for any year since 1898. These results are attributed to the increasingly recognized functions of the medical department to prevent the occurrence of disability rather than to await its inception to effect a cure. The establishment of a naval medical reserve corps is recommended to act as a recruiting body for the regular establishment. The prominent hygienic problems of the service are stated to be contagious and venereal diseases. The proportion of contagious diseases is lower than in former years but there exists what is considered a serious situation in regard to venereal disease, there having been more than 100 primary admissions for this class of affections during the first three months of the year, with an average complement of 1881 who have recently entered the service free from such disease. He advises consistent enforcement of venereal prophylaxis at training stations the same as on board ships. The surgeon-general disapproves of the physical test by riding, and suggests as a substitute the Swedish system of training. The admission rate for pulmonary tuberculosis has declined from 6.26 to 5.60.

MANILA LETTER

Manila, Nov. 5, 1910.

Pharmacy in the Philippines

Now that the Philippine Medical School is thoroughly established and is well under way in offering scientific instruction to its students, and the medical department of Santo Tomas University has shown signs of improvement, it has been thought well to take up the question of the Filipino pharmacist. The question of his efficiency and the local facilities for training pharmacists has been studied with a view of recommending necessary improvements in the existing courses in the three Manila schools of pharmacy, as well as looking toward the establishment of a school of pharmacy in connection with the Philippine Medical School and the University of the Philippines.

In the Philippines, pharmacy is considered one of the learned professions; the pharmacist is in rank next to the physician, and, like the latter, has too often proved ill trained for many of the simple duties of his trade. In many of the towns of the provinces he forms an important factor in the social scale and has sometimes engaged in politics.

In Manila there are good pharmacies, but with very few exceptions the provinces are without efficient or competent pharmacists. The training in the local schools of pharmacy is based on the Spanish system and is not in accord with the modern European methods. Thus we are facing the necessity of having the prescriptions of American and American-trained physicians sent to Manila to be filled. These prescriptions are sometimes written by Manila physicians, sent to the provinces and then returned to Manila to be filled. This state of affairs almost compels the graduates of the Philippine Medical School to be their own pharmacists in the provinces. Such a condition hampers the work of the bureau of health and will defeat many of the efforts of modern medical education in the Islands until improvement is brought about.

With the possible exception of one school—the school of pharmacy of Santo Tomas University—the institutions in Manila are in nowise prepared to train competent pharmacists. Even the graduates of the Santo Tomas school have great difficulty in passing the examinations of the board of pharmaceutical examiners, and radical changes must be made in this school to make it an efficient institution.

In July, 1909, twenty-three candidates entered the examinations of the board of pharmaceutical examiners. Only one passed. At the 1910 examination, twenty-six candidates were entered; not a single candidate passed. The highest grade given was 53 per cent.

The legal requirements are not to be considered drastic. They were made to suit the conditions of the country and are just as liberal as is compatible with public safety in the matter of fairly well-trained pharmacists. Any student who has had a moderately good training in pharmacy should have no trouble in passing the examinations.

If the educational facilities for training pharmacists are not soon improved it will probably be necessary to relax the legal requirements somewhat, otherwise the drug business will be monopolized by a small number of pharmacists. The Filipino is quick to take advantage and is decidedly mercenary when he controls the situation. For this reason it is not advisable to enforce rigidly the regulations covering the practice of midwifery in these islands. It was found in Manila that the few competent midwives would quickly run up their charges to exorbitant rates when the ban was put on their less capable sisters in the profession. The Filipino pharmacist, as well as the Filipino physician, usually regulates his charges by the necessity for his services in a particular case. In an emergency he is often a robber. As an example: one of the medical health officers had occasion to require immediately 2 liters of saline solution in an emergency case. He dispatched a messenger to the local *botica* (drug store) on a hurry-up call for the saline. The bill presented for the 2 liters was 16 pesos ($8.00).

LONDON LETTER

(From Our Regular Correspondent)

London, Dec. 3, 1910.

The Health of Children

The report for 1909 of the chief medical officer of the Board of Education, Dr. George Meredith, is a most important document. It covers the first complete year during which the children entering and leaving the public elementary schools of England and Wales have been subjected to systematic medical examination. It brings together a mass of new and authentic data on the physical condition of the rising generation and has an important bearing on the question of national degeneration, about which so much has been written and so little proved in recent years. The children attending the schools in all number 6,000,000. This comprised the whole of the children of the working class and a large part of the children of the middle class, the remaining children being sent to private schools. About 10 per cent. suffer from serious defects in vision, from 3 to 5 per cent. from defective hearing, 1 to 3 per cent. have suppurating ears, 8 per cent. have adenoids or enlarged tonsils of sufficient degree to obstruct the nose or throat and to require surgical treatment, 20 to 40 per cent. suffer from extensive decay of the teeth, 40 per cent have unclean heads, 1 per cent. suffer from ringworm, 1 per cent. from tuberculosis of a readily *recognizable* form, and 0.5 to 2 per cent. from heart disease. In cases in which disease is discovered measures are taken for its treatment. The fact is brought to the notice of the parents, the parents are assisted in the application of remedial measures and in case of persistent neglect are punished. Notwithstanding the prevalence and serious character of dental disease there is good hope of considerable success in dealing with it, for it seems to be largely due to total neglect of cleanliness of the mouth in childhood, and the necessity for such cleanliness is being more and more impressed on both children and parents by teachers, nurses and health officers. Dental clinics are being established, at which early conservative treatment is begun. The report marks an epoch in the history of education in this country and gives official recognition to the fact, long ignored, that before educating children their physical fitness must be insured.

New Theory as to the Spread of Sleeping-Sickness

Evidence is being brought forward that sleeping-sickness is spread by another fly than the *Glossina palpalis*. The latest fact on this point comes from northwestern Rrodesia, particularly from a valley in which a tributary of the Zambesi flows, where a number of cases of sleeping-sickness have occurred among both whites and natives. In this district no *Glossina palpalis* has been found, and the nearest point at which the fly lives is 400 miles distant. Up to the present all preventive measures taken by the various governments have been in regard to this fly, whose location has been clearly defined. An elaborate map of Africa has been prepared in which the various *Glossina palpalis* areas have been specially colored, and wherever possible, the belt infected by this creature has been cleared and the inhabitants removed to a healthy zone. But if this new theory be adopted future measures will have to be more extensive. The newly suspected fly is another species of tsetse fly, known as the *Glossina morsitans*, which is found in regions much further south than the *Glossina palpalis*, where the latter is unknown.

Florence Nightingale's Will

Miss Florence Nightingale's remarkable character is shown by the directions which she gave as to the disposal of her body. She willed her body to medical science for dissection and requested that, if possible, no memorial, or one of the simplest character, should mark the place of burial; also that the burial services should be extremely simple.

An Actuarial Study of the Influence of Sanatoriums on Pulmonary Tuberculosis

Two actuaries, Mr. W. P. Elderton and Mr. S. J. Perry, have made an important investigation, which even in the voluminous literature of tuberculosis is absolutely new. They have made an actuarial study of the influence of sanatoriums on the expectation of life of the subjects of tuberculosis. The material used was collected by Dr. Noel Bardswell in this country and by Drs. Lawrason Brown and Pope in America. The figures are analyzed and the expectation of life is compared with that given in the Registrar-General's English life-table. It is found that even in cases of tuberculosis in which the treatment has been most successful the expectation of life is much shortened. A comparison is also made between the results obtained before the introduction of the sanatorium treatment and those obtained since it has been adopted. Difficulties were found in making this comparison, but the surprising conclusion is reached that the figures show no superiority in the results of sanatorium treatment. The authors freely admit that their results require confirmation in the light of fuller statistics. Even so, their importance is obvious.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Dec. 2, 1910.

Prizes of the Academy of Sciences

The Académie des sciences has awarded three Montyon prizes in medicine and surgery, each of $500 (2,500 francs); one to Drs. G. Martin, Leboeuf and Roubaud for their work, "Report of the Commission on the Study of Sleeping-Sickness in the French Congo, 1906-08;" the second to Prof. J. Dejerine and Dr. André Thomas of Paris, for their work on diseases of the spinal cord; the third to Dr. E. Perroncito, professor in the Turin medical college, for his work on the diseases of the miners from the St. Gothard to the Simplon. Three prizes of $300 (1,500 francs) have been awarded: the first to Dr. C. Mantoux of Cannes, for his work on the intradermal reaction to tuberculin; the second to Dr. P. Emile Weil of Paris, for his work on hemophilia; the third to Dr. G. Moussu, professor of the veterinary school at Alfort and to M. Monvoisin, for their works on the milk of tuberculous cows. The Barbier prize, $400 (2,000 francs), has been divided between Dr. A. Thiroux, physician to the colonial troops and director of the bacteriologic laboratory of St. Louis, Senegal, for his work on sleeping-sickness and the animal trypanosomiases in Senegal, and M. H. Bierry of the laboratory of experimental physiology of the Sorbonne, for all of his works. The Bréant prize, $20,000 (100,000 francs), intended to reward the discoverer of a cure for Asiatic cholera, has of course not been awarded. Out of the interest of this sum, a prize of $700 (3,500 francs) has been awarded to Dr. Jules Bordet, director of the Pasteur Institute of Brabant, for his "Chemical Theories of Immunity" and "Study of the Serum of Vaccinated Animals, Toxins and Antitoxins," and a prize of $300 (1,500 francs) to Dr. A. Taurelli Salimbeni, head of the laboratory at the Pasteur Institute of Paris, for his work on cholera and the vibrios. The Godard prize, $200 (1,000 francs), has been awarded to Drs. L. Ambard and E. Papin of Paris, for their "Study of Urinary Concentrations." The Dusgate prize, $500 (2,500 francs), has been awarded to Dr. Séverin Icard of Marseilles, for his memoir entitled "Report of Deaths in Hospitals in France and Abroad; Utility of Early Necropsy and Necessity for an Early Diagnosis of Real Death, Permitting Early Necropsy." The Bellion prize, $280 (1,400 francs), has been shared between Dr. Imbeaux, chief engineer of bridges and roads at Nancy, for his "Statistical and Descriptive Annual Report of the Distribution of Water," and M. Frois, labor inspector, and M. Sartory, secretary of the Commission of Industrial Hygiene, for their memoir entitled: "Lyes and Organic Powders in Industry." The prize of Baron Larrey, $150 (750 francs), has been divided between Dr. Chavigny, *agrégé* professor at the school of military medicine at Val-de-Grâce, for his work on military psychiatry, and Dr. Miramond de La Roquette, military physician at Nancy, for his work on the scapular girdle. The Mège prize, $2,000 (10,000 francs), has not been awarded. A prize from the interest has been awarded to Mlle. J. Joteyko, of the laboratory of psychophysiology at the University of Brussels, and Mlle. Stefanowska, for their work on muscular function and the psychophysiology of pain.

In physiology the Montyon prize of experimental physiology, $150 (750 francs), has been divided between Prof. C. Livon of Marseilles, for his works on experimental physiology, and M. Marin Molliard, for his "Organic Nutrition of the Higher Vegetables." The Philipeaux prize, $180 (900 francs), has been awarded to Dr. Maurice Arthus, professor of physiology at the University of Lausanne, for his "Sero-Anaphylaxis of the Rabbit." The Lallemand prize, $360 (1,800 francs), has been divided between M. René Legendre, for his "Nerve Cellule of *Helix Pomatia*," and M. Aldo Perroncito, for his "Cellular Elements in the Process of Degeneration of the Nerves." The Martin-Damourette prize, $280 (1,400 francs), for a work on therapeutic physiology, has been awarded to Dr. E. Laguesse, professor of histology at the Lille medical school, for his work on the pancreas.

Juvenile Crime

In a report to the General Council of the Department of the Seine, M. Ambroise Rendu published suggestive statistics among minors. Out of every 1,000 crimes against persons, four are committed by minors under 16 years, and 164 by minors aged from 16 to 20. Out of every 1,000 crimes against property, two are committed by minors under 16, and 178 by minors aged from 16 to 20. In 1905, 3,805 boys and 566 girls under 16 were before the courts; in 1909, there were 4,517 boys and 703 girls. Believing that it is time to combat this proportion of crime among minors, M. Ambroise Rendu has invited the general council to pass the following resolutions: (1) that minors arrested for any offense should be transported in special conveyances without contact with other arrested persons; (2) that minors' cases should be tried before a special magistrate; (3) that such cases should be tried in *chambre de conseil*, that is, not publicly, but with the aid of a representative of a society for the protection of children.

Contamination of Oysters

While the oyster is believed to possess the power of selecting its food by repelling unsuitable material, the water which it respires penetrates quite freely, unfiltered, and with all its impurities. If this be true, the danger from infection from contaminated oysters would arise much less from the contents of the digestive tube than from the liquid which bathes the respiratory organs and remains in the shells until the oysters are eaten From a communication made in one of the last sessions of the Académie des sciences by M Fabre Domergue, it appears, however, that oysters are capable, in an impure medium, of ingesting a massive dose of detritus of stercoral origin, which may contain germs of infectious intestinal diseases More importance, then, should be attached to the bacteriologic analysis of the oysters themselves, their intestinal contents and their liquor—too much neglected up to the present in France—than to the water of the beds, the degree of infection of which varies, moreover, in large degree from one time to another.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Dec 1, 1910

Personal

Professor Erb celebrated his seventieth birthday November 30 This distinguished clinician, who still enjoys remarkable physical and mental activity, resigned his teaching position some years ago

Professor La Valette St George, professor of anatomy at Bonn died November 30 at the age of 79 He was a pupil of Kolliker and John Muller, joined the Bonn faculty in 1858, became regular professor in 1865 and head of the anatomic department in Bonn in 1875 His most important work was in the field of comparative anatomy, especially the history of evolution In 1907 he resigned his professorship

Professor Eberth, director of the pathologic institute at Halle, will resign his position at the end of the winter semester, on account of his advanced age

Privat docent Dr Heineke has been appointed director of the university surgical policlinic at Leipsic

Law Against Quackery and Nostrums

The principal feature of the proposed law, the bill for which, as I have mentioned, has been recently placed before the Reichstag by the government, is to compel the quacks to announce themselves to the authorities and to subject themselves to control by which they are required to keep business records in which a report is made of their business transactions The following are to be forbidden by the law any treatment that is not founded on personal investigation, such as treatment by mail, etc, treatment by mystic processes, especially faith healing, the treatment of diseases dangerous to the community, which are included under the imperial infectious diseases act, that is, cholera, plague, leprosy, typhus, smallpox and yellow fever, treatment of all diseases or injuries of the sexual organs, especially venereal diseases, the latter even when they affect other parts of the body, the treatment of cancer, treatment by hypnosis, the treatment by the use of narcotics which may extend beyond the part treated, and treatment by hypodermic or intravenous injection The imperial upper house (*Bundesrat*) can prohibit the treatment of other diseases Furthermore, quacks are not to be permitted to administer medicines themselves nor shall they refer their customers to special sources as to supply The trade of the quack is to be forbidden if the facts justify the assumption that by the pursuit of his trade the life of a human being or animal is endangered or health injured or that the customers are being swindled Further, their occupation can be forbidden if they are convicted of a punishable transaction in the course of their business or if their civil rights are forfeited in any other misdemeanor Against fraudulent secret remedies, it is provided that any one shall be punished with imprisonment up to one year and with a fine up to $250 (1 000 marks), who shall in public advertisements which concern the prevention, mitigation or cure of disease in man or animals or tonic remedies for man or animals or infant food, make statements which are not scientifically true and are calculated to deceive the public If the transaction is only negligent, the imprisonment shall be limited to only three months and the fine to $150 (600 marks) It may also be provided that the verdict shall be published at the cost of the convicted I will report on the other details when the law has been passed It is at least to be hoped that it will be passed, although in the discussion so far, objections against a number of the provisions have been raised by all of the speakers The bill is next to be submitted to a committee of the delegates for consideration

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Dec 1, 1910.

Warning Against Certain Scholarships for Medical Students

The scarcity of practitioners in the country has had unpleasant results, and several efforts have been made to induce good men to undertake country practice But as the people are not very rich and the appointments are not too well paid, the country magistrates have always had difficulty in obtaining adequate medical help The party now in power has besides made it a special point to appoint only doctors who fulfil certain national and religious requirements rather than those of scientific education The existence and development of a powerful medical organization, which soon began to pay special attention to the country appointments, still further embarrassed the ruling party by boycotting all appointments below a certain sum In order to counteract the effect of these and similar measures, a number of scholarships valued each at from 600 to 1,000 kronen ($120 to $200) a year, have been offered to medical students from their third university year, under the condition that these men will pledge themselves to enter the services of the country magistrates after having completed their study They would, of course, be sent where the low payment deters regular doctors from settling, and they would have to obey, being under a contract A warning has been issued by the medical organization, explaining matters to the medical students, and showing how such a contract, being agreed on for at least ten years, would mean actual sweating and ruin for the young doctor Hitherto the plan of scholarships has not been very successful

Centralization of Public Charity

For several months efforts have been made to bring about a complete change of the mode of administration of public charitable institutes, including hospitals in Lower Austria (Vienna Letter, The Journal, Feb 5, 1910, p 479). The pretext is the unsatisfactory financial condition of the phantom Vienna "hospital fund" which was long since exhausted in reality, but which preserves a fictitious existence and still keeps the hospitals running by means of loans The fund is in the hands of the government of Lower Austria and its yearly deficit amounts at present to some 1,500,000 kronen As the legal responsibility for the expenses of the hospitals is not fixed on the general government, the municipality or the diet, the latter has offered to take this matter into its own hands under the condition that besides a loan of 10 000,000 a tax of 5 per cent on all rates be granted for this purpose This appears not impossible, but the other conditions have quite a different bearing The diet intends to form a corporation of thirty two men, in which only two representatives of medical men will sit, the remainder being elected or appointed by the general government, the diet and the city of Vienna The latter two authorities belong to the well known reactionary and antimedical party at present in power The above mentioned managers are to be given the supreme control over all hospital directors both in Vienna and in the country, and even over the clinics The appointment of hospital directors as well as of members of the hospital staff is to be in their hands They will be bound nominally to elect a candidate out of three men nominated by the hospital staff, but this of course does not preclude other possibilities It is also intended to make the appointments of hospital doctors permanent, for life, the service to occupy a man's whole time, so that a large number of graduates from the university would be excluded from practical learning Such plans interfere seriously with the future of the medical profession in this country, as it is well known that nepotism and friendship have a great deal to do with this political party

As soon as the outlines of this plan became known in medical circles much indignation and opposition were aroused A protest meeting, in which all hospital directors as well as university professors were present or were represented took place a short time ago and an urgent appeal was directed to the government to call its attention to the danger threatening the population On the other hand, the proposed tax of 5 per cent on all taxes means a heavy addition to the heavy burden now weighing on the rate payers Large sums of money are involved, as the hospitals coming under the scope of the plan have over 16 000 beds The resistance offered by a large section of the population will perhaps be successful in warding off this attack

Pharmacology

"PROFESSOR" SAMUELS AND HIS EYE WATER

One of the latest comets to flash across the firmament of quackery is "Professor" H. Samuels, who hails from Wichita, Kansas. Samuels claims that he is "the only living person" who "treats through the eye" the following diseases:

Consumption
Fits
Cataracts
Paralysis
Blindness
Eczema
Bright's Disease
Morphin Habit
Heart Trouble

These are but a tithe of the numerous ailments that this new apostle of quackery offers to "cure." Samuels has been lavishly spending his easily made money in advertising space. One-third of a city daily's page is no unusual amount of space for him to use for a single advertisement.

The business is conducted along the lines of the typical mail-order fake. A series of "follow-up" circular letters so printed as to simulate individual type-written letters, "symptom blanks," the inevitable and ubiquitous testimonial—these and such other paraphernalia as go to make up the stock-in-trade of the quack, are used by Samuels in his process of swindling the sick and humbugging the helpless. He emphasizes two points in all his advertising claptrap. First he wishes to treat only "hard cases, cases that the regular doctor can do nothing for;" second, he wants it generally known that he has been arrested many times for irregular practice.

Samuels' "remedy" consists of an "eye water" which is claimed to have cured ovarian tumor, "paralysis of the optic nerve," deafness, tuberculosis and various other ills. Two specimens of the "eye water" alleged to be used by Samuels have been sent in by correspondents, from whom we learn that $25.00 an ounce is charged for the stuff. A cursory examination of both samples has been made in the Association laboratory and our chemists report as follows:

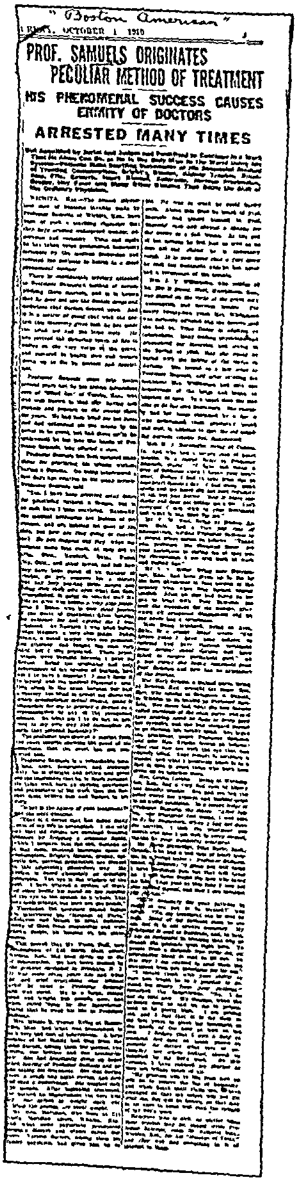
"Each of the two samples of the solution alleged to be used by Professor Samuels was a colorless, slightly turbid liquid having a salty taste. Each gave tests for sodium, chlorid, sugar and a trace of sulphate. In neither were metals such as arsenic, copper, lead, iron, etc., present and in neither could any potent alkaloids be detected.

"One of the samples examined was too small to make a quantitative test practicable. Examination of the larger sample showed that the sodium chlorid and sugar were each present in about the same quantity, viz., 7.5 grams in 100 c.c. (about 35 grains to the fluid ounce).

"The following formula gives a solution which is practically identical with the larger sample examined:

Table salt	10 ounces
Sugar	10 ounces
Hydrant water	1 gallon

"Approximate value 6 cents a gallon; alleged selling price $25.00 an ounce."


" Boston American "
OCTOBER 1 1910
PROF. SAMUELS ORIGINATES PECULIAR METHOD OF TREATMENT
HIS PHENOMENAL SUCCESS CAUSES ENMITY OF DOCTORS
ARRESTED MANY TIMES

Photographic reproduction (greatly reduced) of a two-column advertisement of "Professor" Samuels.—From the *Boston American.*

The absurdity of attempting to cure consumption, the morphin habit, ovarian tumor and scores of other pathologic conditions, by merely dropping a weak solution of salt and sugar in the eye, would seem sufficiently apparent to render quackery of that sort unprofitable. So it would be, were it not for the credulity and unfailing optimism of the chronically ill toward all new "treatments." Samuels' reasons for wanting to "treat" chronic diseases are evident. The quack who attempted to relieve a man's toothache or headache by dropping a little salt water in his eye and charging $25.00 for the process, would find few victims. But with sufferers from chronic diseases the case is different. Ninety-nine consumptives out of a hundred will, for the first few weeks, agree that they have been benefited after having experimented with some new "treatment." And the less scientific the treatment and the more wildly improbable the claims made for it, the greater will be the alleged benefit derived from it.

To devote more space to this humbug would be to dignify it. Suffice it to say the whole business is founded on falsehood and fraud. Any man who will take money from a consumptive, an epileptic or a morphin habitué under pretense of curing his disease with such an inert mixture as that just described is an unconscionable scoundrel.

It is a sorry commentary on our civilization that the incurably ill cannot, apparently, be protected against their own credulity and the wiles of those who would fatten on their misfortune and profit by their sufferings.

[Contribution from the Chemical Laboratory of the American Medical Association]

MAGNESIUM PEROXID

W. A. Puckner and W. S. Hilpert

A number of peroxids such as zinc peroxid, magnesium peroxid and sodium peroxid have been offered to the profession as substitutes for the hydrogen peroxid solution of the Pharmacopeia and have received considerable attention of late. They are claimed to possess the oxygen-producing properties of the Aqua Hydrogenii Dioxidi, modified by the relative stability of the compounds and the metallic salts which are produced in their decomposition. The commercial products are usually mixtures containing but a limited amount of real peroxid; for example, commercial "magnesium peroxid" contains but about 15 per cent. of magnesium peroxid while commercial "sodium peroxid" contains about 75 per cent. of sodium peroxid.

The different peroxids vary considerably in their stability, their solubility and their ease of decomposition in solution. In solutions of acids the peroxids are decomposed, forming hydrogen peroxid and the salt of the metallic radicle of the peroxid. In this way the entire active oxygen-content of the peroxid is quickly made available in the form of hydrogen peroxid in solution. Water dissolves only minute quantities of these peroxids but it does decompose them with varying degrees of readiness. Thus zinc peroxid, although very insoluble, is decomposed by water into zinc hydroxid and hydrogen peroxid as follows:

$$\text{Zno}_2+2H_2O\text{—>}Zn(OH)_2+H_2O_2$$

ALKALINITY FAVORS DECOMPOSITION

It is well known that hydrogen peroxid is supposed to decompose with the formation of water and oxygen (H_2O_2—>H_2O+O). The decomposition of hydrogen peroxid in this manner is retarded, or takes place only to a slight extent, in the presence of acid, as is illustrated by the use of acids to preserve the commercial hydrogen peroxid solutions. On the other hand alkali favors the decomposition of hydrogen peroxid to water and oxygen and the rapidity with which hydrogen peroxid is decomposed is in direct proportion to the amount or strength of the alkali.

When sodium peroxid is decomposed by water a very strong alkali, sodium hydroxid (caustic soda), is formed and therefore the ready decomposition of the hydrogen peroxid is favored and hence the sodium peroxid has strong oxidizing powers. Magnesium peroxid in contact with water also forms an alkaline body, magnesium hydroxid, but which is a much weaker alkali than sodium hydroxid and correspondingly less active in decomposing the hydrogen peroxid present; for this reason magnesium peroxid is not so powerful an oxidizing agent as sodium peroxid. Zinc peroxid forms the weakest alkaline solution of all and is the least powerful oxidizer of the peroxids under consideration.

From this it appears that the energy of the oxidizing powers of different peroxids varies in direct ratio to the alkalinity of the solution produced in their decomposition. The variation in the alkalinity of the solutions formed, affects the therapeutic uses of the peroxid. Sodium peroxid is not desirable for therapeutic use because of the formation of the strongly alkaline solution of sodium hydroxid (caustic soda). Magnesium and zinc peroxids, on the other hand, yield weakly alkaline solutions and are for that reason more desirable.

ADVANTAGES CLAIMED

The advantages claimed for the peroxids of sodium, magnesium and zinc are that they can be used for the extemporaneous preparation of an oxidizing solution and that zinc and magnesium peroxids in contact with the moist surface of a wound or mucous membrane slowly liberate oxygen, *in situ*, at the point where it is most needed.

The claims regarding the value of these peroxids made by the manufacturers of these products, however, are not confined to such statements as the above, but are much more extravagant, wonderful properties being ascribed to the preparations.

A firm, which specializes in the manufacture of peroxids and which has advocated their promiscuous introduction in toilet preparations for the cleansing, bleaching and beautifying of the feet, teeth, face, hands, and nails and for the "rejuvenation of the skin," has made the following statements in advertising pamphlets:

> "Biologically, magnesium peroxid may be found to be a useful factor in cell formation, inasmuch as oxygen is essential for the growth of the protoplasm."

It has also been stated that it is " . . . a preventative of typhoid fever." Zinc peroxid has been claimed to be a "preventative of tetanus" and also "a skin food."

MAGNESIUM PEROXID AS FOUND ON THE MARKET

Magnesium peroxid is one of the preparations which was recommended for inclusion with the next pharmacopeia, by the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June 1909, and it is for this reason, of special interest to physicians. To determine the composition and state of purity of the available brands of commercial magnesium peroxid, their chemical examination was taken up by us in the Association laboratory.

The results of a preliminary examination of specimens of magnesium peroxid were submitted together with a tentative description to the firms whose labels appeared on the specimens. In view of the results found and of the criticism with which the descriptions met it was considered advisable to take up again the examination of magnesium peroxid, with the special object of determining the keeping quality of the product. Accordingly fresh specimens were purchased and also solicited directly from the firms marketing the product. In response to the request the Mallinckrodt Chemical Works, Powers, Weightman, Rosengarten Co., and the Roessler and Hasslacher Chemical Co. sent specimens, for which appreciation is at this time expressed. Specimens bearing the labels of these firms were purchased at the same time on the open market and were examined with the submitted specimens. At the same time samples of each of the six specimens were placed in small vials which were completely filled and tightly stoppered, and samples of the specimens purchased on the open market were placed in wide-mouth bottles with loosely-fitting stoppers and all set aside for six months, at the end of which time they were all again examined.

RESULTS OF EXAMINATION

Physically, the six specimens were practically identical, each being a light, white, tasteless and odorless powder, practically insoluble in water. Each sample was soluble in dilute acids, yielding a solution which responded to tests for peroxid, magnesium, chlorids and small quantities of sulphates, iron and calcium. The specimens also responded to tests for carbonate. In no case were heavy metals, such as lead, copper, arsenic, etc., found.

As the value of magnesium peroxid depends chiefly on its peroxid content, assays were made to determine the total available oxygen in each specimen and the results calculated to magnesium peroxid. The following table contains the magnesium peroxid content calculated from the available oxygen found both at the time the specimens were received and again six months later:

Brand[1]	Source	MgO_2 content as received	MgO_2 content 6 months later[2] *A*	*B*
R. & H.	Market	14.66	14.44	14.33
	R. & H.	25.18	18.26	.....
Mall.	Market	17.43	17.15	16.90
	Mall.	15.56	15.28	.....
P. W. R.	Market	12.17	11.20	11.50
	P. W. R.	15.45	14.63	.....

[1] "R. & H." refers to the Roessler and Hasslacher Chemical Co., "Mall." refers to Mallinckrodt Chemical Works and "P. W. R." refers to Powers, Weightman, Rosengarten Co.

[2] *A*—Specimens kept in vials completely filled and tightly stoppered. *B*—Specimens kept in vials partially filled and loosely stoppered.

These results show that the obtainable specimens of magnesium peroxid vary widely in their peroxid content and that the specimen containing a large amount of peroxid deteriorated rapidly on keeping; and that magnesium peroxid keeps equally well whether stored in completely filled, well stoppered bottles or in partially-filled, loosely-stoppered bottles.

THE CHLORID CONTENT

In making the qualitative test for chloride it was found that some specimens contained relatively large quantities of this impurity and accordingly the chlorid content was quantitatively determined with the following results:

Brand	Source	Chlorid (Cl) Per cent.
R. & H.	Market	6.89
	R. & H.	0.21
Mall.	Market	1.65
	Mall.	0.16
P. W. R.	Market	Trace
	P. W. R.	2.56

The results of this examination show that while the chlorid content varies rather widely, one specimen is practically free from this impurity. It is also interesting to note that, with the exception of one brand, the specimens sent by the firms contained less chlorid than the specimens purchased on the market.

WHAT THE RESULTS SHOW

The results as a whole show that the commercial magnesium peroxids vary considerably both as to composition and stability and they also show that magnesium peroxid of an acceptable state of purity and stability can be manufactured. The above examination demonstrates the need of a standard for magnesium peroxid and accordingly a tentative minimal standard of 15 per cent. real magnesium peroxid (MgO_2) with limits for permissible amounts of impurities was submitted to the three firms whose products were examined. In reply the Mallinckrodt Chemical Works pointed out "that magnesium peroxid deteriorates quite rapidly after manufacture until it reaches about 15 per cent., at which point it remains constant and stable," a condition practically found. Regarding the same point the Roessler and Hasslacher Chemical Co. wrote: "The amount of 15 per cent. magnesium peroxid is rather low to stamp it as standard," yet a specimen bearing the label of this firm, purchased on the market, was found to contain somewhat less than this amount.

A SUGGESTED STANDARD

Considering the available data together with the results of this examination it is recommended that magnesium peroxid be required to comply with the following provisional description:

Physical Characteristics.—Magnesium peroxid is a white, tasteless, odorless and amorphous powder, practically insoluble in water, but soluble in dilute acids.

Chemical Characteristics.—If about 1 gm. magnesium peroxid be dissolved in 25 c.c. dilute nitric acid and 2 c.c. tenth-normal silver nitrate added to the solution and the resulting precipitate filtered off, the further addition of a few drops of silver nitrate solution to the filtrate should not produce a turbidity (limit of chlorids).

If about 1 gm. magnesium peroxid be exposed to the full heat of a Bunsen flame for five minutes, then dissolved in 25 c.c. dilute hydrochloric acid and the solution made up to 100 c.c., a solution will result which will conform to the following tests:

Ten c.c. of the solution saturated with hydrogen sulphid should yield no precipitate, nor become colored (limit of heavy metals).

Ten c.c. of the solution to which 10 c.c. ammonium chlorid solution and ammonium hydroxid in excess have been added, should yield not more than a turbidity on the addition of ammonium carbonate (limit of calcium).

Ten c.c. of the solution should yield not more than a turbidity on the addition of barium chlorid solution (limit of sulphates).

Ten c.c. of the solution should not immediately give a blue color on the addition of a drop of potassium ferrocyanid solution (limit of iron).

If 0.2 to 0.3 gm. magnesium peroxid, weighed into a flask, be dissolved with 20 c.c. dilute sulphuric acid, the solution diluted with 50 c.c. water, the titration of this solution with tenth-normal potassium permanganate should indicate the presence of not less than 15 per cent. magnesium peroxid, MgO_2. (1 c.c. tenth-normal potassium permanganate is equivalent to 0.00279 gm. MgO_2.)

Marriages

Sidney H. Streett, M.D., Baltimore, to Miss Mae Green, at Baltimore, November 23.

Frank L. Sutton, M.D., to Miss Mary Russell, both of Sedalia, Mo., December 1.

James Fitzgibbon, M.D., to Miss Alice Barbian, both of Racine, Wis., November 24.

Halsey Beach Loder, M.D., Boston, to Miss Beatrice Byers, at Indianapolis, December 17.

Bjarne Ravn, M.D., Scandinavia, Wis., to Miss Myrtle Frogner, of Iola, Wis., December 1.

Howell Shoener Zulick, M.D., to Miss Marguerite Patton, both of Philadelphia, December 7.

Claude Watson, M.D., Nebraska City, Neb., to Mrs. Sarah Wodehouse of Lincoln, December 7.

Charles J. Overman, M.D., Marion, Ind., to Miss Anna Mary Johnson of Urbana, O., December 14.

William Barnett Owen, M.D., Louisville, to Miss Emily Vance of Lexington, Ky., December 8.

Moses Lane Strathern, M.D., Faribault, Minn., to Miss Anna Ellis of Ishpeming, Mich., recently.

Joseph Louis Ransohoff, M.D., Cincinnati, to Miss Doris Kaufman of Paris, France, December 11.

Arthur Clyde Thorpe, M.D., to Miss Florence Chase, both of Los Angeles, at Lankershim, Cal., November 30.

William Campbell Posey, M.D., Philadelphia, to Miss Haddassah Hamilton Felton of Chicago, December 14.

Ira Carleton Chase, M.D., Fort Worth, Tex., to Miss Helene Irene Keatinge of New York City, December 15.

David B. Knox, M.D., Georgetown, Ky., to Miss Susan Parrish Phelps, of Richmond, Ky., at Lexington, December 8.

Deaths

Henry Hutchinson, M.D. Hahnemann Medical College, Philadelphia, 1874; of St. Paul; a member of the State Board of Health since 1894, and for the last nine years its president; a member of the staff of the St. Paul City and County Hospital. St. Luke and St. Joseph's hospitals; a member of the American Public Health Association and Minnesota State Sanitary Association; professor of theory and practice of medicine in the College of Homeopathic Medicine and Surgery of the University of Minnesota; died suddenly in a hotel in Mustapha Superior, Algiers, North Africa, December 1, from heart disease, aged 61.

Alpheus Albert Deering, M.D. Medical School of Maine, Brunswick, 1868; a member of the American Medical Association; once secretary of the Iowa State Medical Society, and for twenty years secretary of the Central District Medical Association; district surgeon of the Chicago and Northwestern Railway Company at Boone, Iowa; formerly postmaster of Boone, a director of the Ericson Library and the Eleanor Moore Hospital; died in the latter institution, December 3, after an operation for disease of the kidneys, aged 65.

Clarke Gapen, M.D. Northwestern University Medical School, Chicago, 1875; a member of the American Medical Association; formerly professor of medical jurisprudence in the Wisconsin State University and College of Physicians and Surgeons, Chicago; for three years superintendent of the Kankakee State Hospital; formerly commissioner of health of Omaha; died at his home in Madison, Wis., December 17, from disease of the heart and kidneys, aged 60.

Ole Tollefson Hoftoe, M.D. Rush Medical College, 1885; a member of the American Medical Association; for several years local surgeon of the Chicago, Milwaukee and St. Paul Railway Company, at Lanesboro, Minn.; and afterward a practitioner of Abercrombie, N. Dak., for ten years, and for three years coroner of Richland county; died at his home in New London, Minn., November 13, from carcinoma of the stomach, aged 56.

Thomas M. Chaney, M.D. University of Maryland, Baltimore, 1866; a member of the American Medical Association; acting assistant surgeon in the Army from 1866 to 1867; until five years ago a practitioner of Baltimore; and since then a resident of Chaney; president of the Calvert County Medical Society; died at his home, December 6, from neurasthenia, aged 69.

George E. Goodfellow, M.D. University of Wooster, Cleveland, 1876; of Tucson, Ariz.; a member of the American Medical Association; for five years chief surgeon of the Southern Pacific Railroad lines in Mexico; a surgeon in the Spanish-American War with service in Cuba; died in the Angelus Hospital, Los Angeles, December 7, aged 54.

Thomas Robinson Little, M.D. University of Pennsylvania, Philadelphia, 1900; a member of the American Medical Association; medical director of the Southern Life and Trust Company; died at his home in Greensboro, N. C., in November, from edema of the lungs, consequent on asthma, from which he had suffered for several years, aged 36.

Thomas Coit Fanning, M.D. New York University, New York City, 1861; formerly assistant at the Walters Park (Pa.) Sanitarium; for two terms a member of the board of trustees of Tarrytown, N. Y., and afterward water commissioner; died at Stamford Hall, Stamford, Conn., November 4, from cerebral hemorrhage, aged 70.

E. Lawrence Herriott, M.D. University of Nashville, Tenn., 1860; a member of the American Medical Association; acting assistant surgeon, U. S. Army, during the Civil War; until three years ago a practitioner of Jacksonville, Ill., when he moved to San Antonio, Tex.; died at his home in that city, November 30, aged 77.

Michael F. Gallagher, M.D. Georgetown University, Washington, D. C., 1889; Bertillon identification expert in the Department of Commerce and Labor, Washington; and a member of the Microscopical Society of the District of Columbia; died at his home in Washington, November 25, from angina pectoris, aged 52.

Horace Babcock, M.D. University of Buffalo, 1851; a practitioner of Wisconsin until 1862, when he entered the United States service as surgeon of the Second Wisconsin Volunteer Infantry; after the Civil War, a resident and practitioner of Gowanda, N. Y.; died at his home in that place, December 3, aged 86.

Walter Henry Wentworth, M.D. College of Physicians and Surgeons, New York City, 1863; acting assistant surgeon, U.

S. Navy during the Civil War; and for many years a practitioner of Pittsfield, Mass.; died suddenly at his home in Providence, R. I., December 7, from cerebral hemorrhage, aged 69.

Asa King Warren, M.D. University of Michigan, Ann Arbor, 1856; for 30 years a member of the board of trustees of Olivet (Mich.) College; for two terms state representative and for one term senator; treasurer of Eaton county; died at his home in Charlotte, December 9, from nephritis, aged 80.

Charles O. Chester, M.D. University of Buffalo, N. Y., 1876; of Buffalo; a member of the Medical Society of the County of Erie; formerly surgeon of the Charity Eye and Ear Dispensary; a specialist on diseases of the nose and throat; died in the Buffalo State Hospital, November 22, from paresis, aged 54.

Benjamin Coffin Taber, a practitioner of Illinois for twenty-five years; then a resident of California, and for the last twenty years a practitioner of Texas, and a member of the State Board of Health; died at the home of his daughter in Dennison, November 12, from senile debility, aged 97.

Frederick William Kirkham, M.D. University of Cambridge, England, 1882; L.R.C.S., Edinburgh, 1882; L.R.C.P., Edinburgh, 1889; a member of the State Medical Association of Texas; county physician of Cameron county; died at his home in Brownsville, September 19, from uremia, aged 51.

Francis Marion Charles, M.D. Howard University, Washington, D. C., 1894; a veteran of the Civil War; and since 1891 a clerk in the office of the Civil Service Commissioner, Washington, D. C.; died at his home in Washington, November 29, from cerebral hemorrhage, aged 66.

James Edgar White, M.D. Rush Medical College, 1883; one of the organizers and supreme medical director of the Court of Honor; until 1906 a practitioner of Urbana, Ill.; died at his home in Springfield, Ill., December 10, from cerebral hemorrhage, aged 55.

Robert E. VanNaten, M.D. Eclectic Medical College of Philadelphia, 1863; a veteran of the Civil War; postmaster of Cooperstown, Pa., for sixteen years and a school director for twenty-six years; died at his home, December 4, from angina pectoris, aged 70.

Oliver J. Thibodo, M.D. Queen's University, Kingston, Ont., 1857; a pioneer practitioner of Phoenix, Ariz; for many years a surgeon on transatlantic steamers; died at the home of his daughter in Los Angeles, November 26, from cerebral hemorrhage, aged 76.

Frederick B. McNeal, M.D. Bellevue Hospital Medical College, 1867; a veteran of the Civil War; elected state dairy and food commissioner of Ohio in 1891 and reelected in 1893; died at his home in Troy, November 30, from pneumonia, aged 70.

Henry Hammond Gallison, M.D. Harvard Medical School, 1872; a member of the American Medical Association; and an artist of considerable distinction; died at his home in Cambridge, Mass., October 12, from cerebral hemorrhage, aged 60.

John A. Swope, M.D. Pennsylvania Medical College, Gettysburg, about 1850; representative from Pennsylvania in the forty-eighth and forty-ninth congresses, and later a resident of Washington; died at his home in that city, December 6, aged 82.

Crawford E. Phillips, M.D. Bennett Medical College, Chicago, 1886; a member of the American Medical Association; formerly of Wilton, Wis.; died September 17, at the home of his son in Scott's Mills, Ore., from pneumonia, aged 57.

Simon Peter Burkhart, M.D. Philadelphia University of Medicine and Surgery, 1872; a practitioner of Blair, Center, and Clearfield counties, Pa.; died at the home of his daughter in Altoona, November 22, from senile debility, aged 75.

Amos Button Heard, M.D. Detroit Medical College, 1872; a veteran of the Civil War; for several terms a member of the borough health board of Northeast, Pa.; died at his home, November 17, from valvular heart disease, aged 75.

William C. Van Buskirk, M.D. New York University, New York City, 1854; M. C. P. and S., Ont., 1877; first mayor and for thirty-five years medical health officer of St. Thomas, Ont.; died at his home, November 10, aged 86.

Benjamin Franklin Spurgeon, M.D. University of Louisville, Ky., 1874; a member of the Medical Society of the State of California; died at his home in Chico, November 23, from disease of the kidney and bladder, aged 57.

Joseph C. Rauth, M.D. Detroit College of Medicine, 1903; a member of the Ohio State Medical Association; coroner of Wyandot County; died at his home in Upper Sandusky, December 8, from typhoid fever, agegd 35.

Rudolf S. Dubs, M.D. University of Berlin, Germany, 1893; a member of the American Medical Association; physician to the Bethesda Home; died at his home in Chicago, December 18, from pleuropneumonia, aged 44.

Richard L. Cook, M.D. Medical School of Maine, Brunswick, 1860; of Sturgeon Bay, Wis.; a surgeon of volunteers during the Civil War; died suddenly in the Union Hotel, Sturgeon Bay, December 9, aged 77.

Horace Fabian Kilgore (license, Minn., 1883, exemption certificate); for more than thirty years a practitioner of Luverne, Minn.; died in Lemon City, Fla., September 6, from hemorrhage of the bowels, aged 76.

Ruffin Coleman, M.D. University of Nashville, Tenn., 1869; of Bouvoir, Miss.; a Confederate veteran; died in the Soldiers' Home, Mountain Creek, Ala., Sept. 24, 1909, from disease of the intestine, aged 64.

Bruce Wallace, M.D. Memphis (Tenn.) Hospital Medical College, 1882; a member of the State Medical Association of Texas; died at his home in Houston, July 31, from heart disease, aged 52.

William Francis Hussey, M.D. Tufts Medical School, Boston, 1905; a member of the Massachusetts Medical Society; died at his home in Roslindale, Boston, December 2, from heart disease, aged 29.

David Foss, M.D. Berkshire Medical College, Pittsfield, Mass., 1861; of Newburyport, Mass.; died in the Homeopathic Hospital, in that city, December 2, after a surgical operation, aged 73.

Everett Grover Cleveland Snider, M.D. University of Louisville, 1910; an intern in St. Vincent's Infirmary, Little Rock, Ark.; died in that institution, October 17, from typhoid fever, aged 26.

Frederick Ghostley, M.D. Minneapolis College of Physicians and Surgeons, 1909; who recently assumed charge of a hospital at International Falls; died at Anoka, Minn., May 3, aged 26.

John S. Watson, M.D. Bennett Medical College, Chicago, 1875; for many years a practitioner of Minooka, Ill.; died at his drug store in that place, December 9, from myocarditis, aged 65.

Job Byron Marcus Dickens, M.D. Eclectic Medical College of the City of New York, 1871; died at his home in Newburyport, Mass., December 3, from cerebral hemorrhage, aged 65.

John S. Shrawder, M.D. Jefferson Medical College, 1865; one of the earliest inventors of motor vehicles; died at his home in Collegeville, Pa., December 4, from acute gastritis, aged 71.

John Hugh Walsh, M.D. Medico-Chirurgical College of Philadelphia, 1908; died at his home in Philadelphia, November 28, from tuberculosis of the lungs, aged 34.

A. Procter Sherwin, M.D. New York Homeopathic Medical College, New York City, 1885; died at his home in Suffield, Conn., November 22, from pneumonia, aged 50.

James A. Cullop, M.D. Kentucky School of Medicine, Louisville, 1893; died at his home in Haskell, November 20, from pneumonia.

Correspondence

Prevention of Perforation in Submucous Resection of the Nasal Septum

To the Editor:—Concerning my article, published November 19, Dr. Albert Bardes suggests (The Journal, November 26, p. 1910) that we "incise the mucous membrane and perichondrium at B instead of at A and retract. Then dissect forward the tissue anterior to the incision and incise the cartilage at A. This allows the flap B to A to cover the stump of cartilage."

It apparently has not occurred to Dr. Bardes that, if his directions are followed exactly, there will be no stump of cartilage to be covered by the flap B to A. In my article I stated that "this projecting ledge of cartilage was found not only to be completely covered over, but also to appear to aid very materially in holding the edges of the wound in close apposition, acting somewhat as a natural splint." Several months ago I did a submucous resection in practically the manner described by Dr. Bardes. This one trial showed me that I was immeasurably increasing the difficulty of the operation, and at the same time doing away with the projecting ledge of cartilage, which I had found of such value. Dr. Bardes concludes his remarks with this sentence: "If this is not done the incised membrane undergoes cicatricial-retraction and leaves a dry and crusted surface, besides delaying healing." On the contrary, in my cases, more rapid healing and less crusting has been obtained by the method described than by any previous method used.

I must add, however, that my best results have been in three cases in which I have operated within the last few days, in each of which fine silk sutures approximated the edges of the wound.

Richard M. Nelson, M.D.,
Colon Hospital, Cristobal, C. Z.

Uniform Size and Card Index for Reprints and Advertisers

To the Editor:—I wish to suggest that The Journal use its influence to get some uniformity in the size of folio to be used in reprints of various sorts whether put out by authors or (other?) advertisers. If an index card of uniform size were adopted at the same time by advertisers and publishers and sent out with their articles a great deal that goes into the doctor's waste-paper basket would be preserved, indexed and used. I am by no means the originator of this idea but think it worth being called to the attention of the A. M. A. again. F. W. Starr, Stanley, Wis.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SODIUM CITRATE IN FURUNCULOSIS

To the Editor:—In reply to a communication in this department (Nov. 26, 1910, p. 1911) permit me to inform your correspondent that the formula for sodium citrate, as used in furunculosis in the inoculation department of St. Mary's Hospital, London, where Sir Almroth E. Wright is director and where I was formerly an assistant, is:

Sodii citratis	gr. 2
Sodii chloridi	gr. 20
Aquæ	℥ 1

Misce. Sig.: Apply externally as directed.

The preferable method of applying this solution is to cut a hole in a piece of oiled silk, or waxed paper, which is just large enough to allow the opening of the furuncle to stick through. Place over this hole a piece of cotton soaked in the solution and cover it with another piece of waxed paper and keep the dressing in place with strips of adhesive. When irritation becomes objectionable leave off for a few hours and resume when it subsides.

F. J. Clemenger, Asheville, N. C.

COMPATIBILITIES OF SILVER NITRATE, ALKALIES AND ALKALOIDS

To the Editor:—1. Kindly tell me what excipient I should use in silver nitrate pills. How is it that the silver does not act on the hyoscyamus that is so often prescribed with it?

2. We are told that alkalies and alkaloids should not be combined in a single prescription. If this is the case, should codein be prescribed with potassium iodid or ammonium chlorid? F. A. N.

Answer.—1. Silver nitrate should be prescribed in pill form with an inert vegetable powder, such as powdered licorice, with a little gum tragacanth as excipient. These pills should be freshly made. They have the advantage of being readily soluble, but, as silver nitrate acts on organic matter, they are liable to change in time. To obviate this it has been proposed to use wax or paraffin, which produces a mass that does not readily undergo chemical change, but is likely to be only slowly active on account of the insolubility of the excipient. The use of an inorganic powder, such as potassium nitrate or pure precipitated silicic acid, has been suggested. It is probable that kaolin would answer for this purpose and might be made adhesive by a small amount of tragacanth paste. It is probable that silver nitrate acts to some extent on hyoscyamus, if in solution, but if in the dry form, as in pills, there may be little or no change. In the stomach the silver nitrate probably would combine with the organic matter of the stomach secretion rather than with hyoscyamus.

2. Alkalies are incompatible with the salts of alkaloids because they precipitate the alkaloid from solution. The salts of the alkali metals are usually not alkaline, and do not precipitate the alkaloids as a rule. As an exception, we may note that iodids do precipitate solutions of the salts of some alkaloids. Potassium iodid is not an alkali, but a neutral salt. It will not precipitate solutions of codein, but it is usually safest to prescribe potassium iodid by itself. Ammonium chlorid is a neutral salt and does not precipitate alkaloids. It can, therefore, be used with solutions of salts of codein or with those of other alkaloids without danger of precipitation of the alkaloid.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Dec. 17, 1910.

Mason, George L., D.S., December 2, reported for temporary duty at Fort William H. Harrison, Mont.

Bartlett, C. J., capt., December 9, granted leave of absence for one month and fifteen days.

Huntington, P. W., capt., December 9, orders relieving him from duty in the Philippine Islands revoked.

Fife, James D., capt., December 9, on arrival at San Francisco will proceed to Fort Slocum, N. Y., for duty.

Cutliffe, William O., M.R.C., December 13, reports departure from treatment at Walter Reed General Hospital, Takoma Park, D. C., on three months' leave of absence on surgeon's certificate of disability.

Wing, Franklin F., D.S., December 7, ordered to proceed from Fort D. A. Russell, Wyo., to Fort Crook, Neb.; thence to Fort Omaha, Neb.; thence to Fort Des Moines, Iowa, for temporary duty.

McCord, Donald P., M.R.C., December 10, relieved from duty at Fort Ward, Wash., and ordered to Fort George Wright, Wash., for duty.

Demmer, Charles C., lieut., December 10, relieved from duty at Fort Thomas, Ky., and ordered to Schofield Barracks, H. I., for duty on transport sailing from San Francisco March 5, 1911.

The following named officers of the Medical Corps are detailed to take the course of instruction at the Army Field Service School for Medical Officers, Fort Leavenworth, Kan., beginning about April 1, 1911: Reynolds, Frederick P., major; Fauntleroy, Powell C., major; Clayton, Jere B., major; Bispham, William N., major; Bevans, James L., captain; Thompson, Henry D., captain.

Ramsey, William H., C.S., December 8, left Omaha on thirty days' leave of absence.

Craig, Charles F., capt., December 12, detailed to represent the Army at the meeting of the American Association for the Advancement of Science, to be held at Minneapolis, Minn., Dec. 27 to 30, 1910.

Kelly, John P., M.R.C., December 12, on arrival at San Francisco will proceed to his home. Lieutenant Kelly is relieved from active duty in the Medical Reserve Corps, to take effect on the expiration of his leave of absence.

Edwards, George M., lieut., December 13, will make one visit per week for a period not to exceed two months, beginning Dec. 19, 1910, to New York City, for the purpose of making a special study of eye refraction.

Heflebower, R. C., lieut., December 14, relieved from duty at Fort Hamilton, N. Y., and ordered to Army General Hospital, Fort Bayard, N. Mex., for duty.

Long, Charles J., D.S., December 9, reported for duty at Fort Andrews, Mass.

Birmingham, H. P., lieut.-col., and Kean, Jefferson R., lieut.-col., December 14, detailed members of an Army retiring board to meet at Washington, D. C.

Brown, Henry L., capt., December 8, left Fort Morgan, Ala., on fifteen days' leave of absence.

Talbot, E. M., capt., December 13, left Fort D. A. Russell, Wyo., on eighteen days' leave of absence.

Weed, Mark D., lieut., December 16, left Walter Reed General Hospital, Takoma Park, D. C., on ten days' leave of absence.

Medical Corps, U. S. Navy

Changes for the week ended Dec. 17, 1910.

White, E. C., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the *Vicksburg*.

Biello, J. A., asst.-surgeon, detached from the *Vicksburg* and ordered to duty at the naval hospital, Mare Island, Cal.

Woodward, J. S., P. A. surgeon, ordered to duty at the naval hospital, Mare Island, Cal.

Smith, H. L., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered home to await orders.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Dec. 14, 1910.

Brown, B. W., surgeon, relieved from duty at Vineyard Haven, Mass., and directed to proceed to Hongkong, China, for duty.

McCoy, G. W., P. A. surgeon, orders to proceed to Honolulu, T. H., revoked.

De Valin, H., P. A. surgeon, relieved from duty at Havana, Cuba, and, on the return of P. A. Surgeon J. S. Boggess, from leave of absence, from temporary duty at Chicago, and directed to proceed to San Francisco and report to Surgeon Rupert Blue for duty.

Thompson, L. R., asst.-surgeon, directed to proceed to Almena, Wis., on special temporary duty.

Brooks, S. P., acting asst.-surgeon, granted seven days' leave of absence from Dec. 12, 1910, under paragraph 210, Service Regulations.

Foster, S. B., acting asst.-surgeon, granted fifteen days' leave of absence from Dec. 17, 1910.

Tarbell, B. C., acting asst.-surgeon, leave of absence for thirty days from Dec. 1, 1910, revoked.

Board of medical officers convened to meet at Fort Trumbull, New London, Conn., Dec. 9, 1910, for the physical examination of cadets of the Revenue Cutter Service, to determine their physical fitness for promotion. Detail for the board: Passed Assistant Surgeon G. L. Collins, chairman; Assistant Surgeon H. J. Warner, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

REFRACTING OPTICIANS, THE PUBLIC AND THE MEDICAL PROFESSION

James Thorington, M.D.

PHILADELPHIA

When opticians first applied to the state legislatures for regulation, the medical profession paid little attention, considering it a move to regulate a trade. Soon, however, the opticians commenced calling themselves "optometrists," and their trade a "profession"; i. e., "optometry." Then "optometry boards of examiners" took the right to ask medical questions and thereby made themselves a medical examining board. This fact was and is conspicuously evident as shown in the numerous medical questions asked in examinations given by these "optometry boards."

As soon as the medical profession had its attention drawn to this inroad of the non-medically trained on the field of the profession and the Aemrican Medical Association had passed resolutions[1] against further enactment of such vicious legislation, then such states as Massachusetts, Connecticut, Missouri, Texas, Ohio, Illinois and Maryland defeated the attempts of the so-called "optometrists."

It is important at this time to call the attention of the medical profession to the fact that refracting opticians have commenced their campaign. Petitions in favor of optometry legislation are being circulated among business men and physicians. The *Keystone Magazine*, for December, 1910, prints some of these petitions beginning: "To the Members of the Legislature: We the undersigned business men in your district, etc.," and "To the Members of the Legislature: We the undersigned physicians in your district, etc."

A new legislative campaign is to be conducted in order to get optometry laws enacted in the twenty-four states that have no such laws as yet.[2] Unquestionably, a number of these bills will be submitted to the legislatures in a number of states during the coming winter. So far from having the endorsement of any physician, they should be met with rigid disapproval and condemnation. There is no necessity or justification, either legal or economic, for any such laws, nor can any argument in favor of them be made which is not founded on sophistry.[1] Just as soon as "refracting opticians" receive "recognition" by the passage of an optometry bill, they immediately assume and advertise themselves as on an equality with members of the medical profession, whereas they are not medically trained, and the public is correspondingly deceived. This fact is well evidenced in an optician's circular at hand from which we quote the following:

> "We are to-day approved and accepted as STANDARDS by special optometry laws in twenty-four states which now recognize the practice of optometry equally with that of medicine."[3]

The optometry bill, so-called, legalizes prescribing for eyes by *men who are not members of the medical profession*, such as opticians, lens-grinders and jewelers. A very considerable proportion of defective eyes are the result of disease or abnormal conditions of the body. This being the case, a bill which licenses an optician to prescribe for conditions which can be *recognized and treated only after years of study and training* in medicine, may legalize the doing of an irreparable injury. Under the provisions of this bill, practically any man who has made and ground glasses for a period of two years before the passage of this bill can be admitted as a licensed refracting optician. Under this license, without even a smattering of medical knowledge, he can prescribe for the eyes of a man who is suffering from Bright's disease, or from rheumatic troubles, which diseases, and others also, directly affect the eyes, although he knows nothing about the particular disease or the general principles of anatomy, physiology and pathology. Moreover, this bill not only licenses a host of incompetents but it takes away from them all chance of prescribing correctly. Under the provisions of this bill, opticians are not allowed to put drops in their customers' eyes. It is the almost unanimous consensus of opinion among the text-book writers and ocular authorities that the majority of individuals under 35 years of age cannot have their eyes accurately measured for glasses without the use of drops.

By allowing non-medically trained persons to prescribe without this safeguard, inaccurate and harmful measures are legalized by statute. It is the province of the optician to grind lenses in accordance with the prescription of a trained doctor. He has no more business to prescribe for diseases of the eye or to attempt to treat abnormal conditions of the eye than has a shoemaker or glovemaker to treat diseases of the feet and hands. The medical profession, the better class of opticians and the majority of the thinking members of the laity *are opposed to these bills because they do not believe in* creating a doctor by statute rather than by study and training, and, especially, because the proposed bill not only legalizes incompetent men but also legalizes incompetent methods which are against the weight of all medical authority. For the above reasons the bill has failed to pass in a number of states, namely, Massachusetts, Connecticut, Pennsylvania, Illinois, Maryland, Texas, New Jersey, Missouri and Ohio. In most states where it has passed it was rushed through before the public had been aroused to its evils. It is to be hoped that no measures will become a law which will put the eyes of citizens beyond the pale of medical assistance.[4]

The purpose of this article is to endeavor to explain to *the general practitioner that it is* his personal duty to himself, his patients and to the medical profession, to oppose, in every way possible, the entrance into the practice of medicine of those who are not medically trained but who would practice on the body as a whole or specialize on any particular organ. As refracting opticians attempt to do the work of ophthalmologists, the great majority of general practitioners immediately get the impression that the passage of optometry legislation does not concern them, though it should be opposed by the ophthalmologists themselves. When it comes to an argument before committees on legislature, the members of the legislature conceive the idea, as general practitioners do not appear with the ophthalmologists in opposition to optometry bills, that it is a case of jealous rivalry. The true explanation of the successful passage of optometry bills in several states is found in the fact that the medical profession did not offer unanimous opposition. Disapproval has been left entirely to ophthalmologists. Naturally ophthalmologists have led the opposition, but only to explain, in detail, the folly of trying to treat the eye without taking the rest of the body into consideration, the impossibility of treating it adequately under such conditions, and also the irreparable harm that may follow from allowing non-medically trained individuals to prescribe for and diagnose diseases of this very important organ. If members of the medical profession had joined ophthalmologists in this endeavor to keep out of the profession those who are not qualified by a course of medical training and a state medical license, the refracting opticians would never have made any inroad into the profession. General practitioners could assist the cause of the medical profession if they would instruct their patients in the difference between an examination of their eyes by a specialist who is a doctor and one by the optician or jeweler who parades under the new name of "optometrist" and has never qualified in medicine. General practitioners also could assist by explaining to members of the legislature the interest of the commonwealth in having the eyes of the public, and particularly of children, protected by the members of the profession, and the importance of eyesight to the welfare of the community; also the fact that commercialism does not govern the practice of ophthalmologists, whereas it is a most conspicuous element in the work of the refracting optician.

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[1] The Attitude of Physicians on Optometry Laws, THE JOURNAL A. M. A., Oct. 3, 1908, p. 1169.

[2] New York Times, Sept. 4, 1910.

[3] Pennsylvania Med. Jour., October, 1910.

[4] Thorington: Philadelphia Public Ledger, Feb. 19, 1909.

This communication has been prompted especially by the reading of the excellent illustration of the dangers of optometry by Dr. Janeway.[5]

Surely every ophthalmologist can relate similar instances by the score. Only to-day, a telegraph operator was referred from a neighboring city with a history that he had purchased six pairs of glasses in the last eighteen months prescribed by opticians on account of a severe pain in the right eye. His eyes were found to be practically standard and no glasses necessary. Transillumination and inspection by a rhinologist revealed pus in the right frontal sinus as well as the right antrum, together with nasal polypi.

Instances of glasses having been prescribed by opticians when glasses should not have been ordered are not infrequently seen in private practice and in the clinic. This unfortunate condition of affairs can never cease until the profession demands protection for the citizens of the commonwealth; but the profession must unite and stay united in this demand. It would be a misfortune if the attempt should be neglected too long. If we do not bestir ourselves we shall find our profession sinking every year into deeper depths of restriction and degradation. Doctors do not need to regret the competition of each other, for; if this be fair, it is a stimulus rather than a hurt. The competition that really hurts is from the outside; it is the competition of persons who have never been trained or educated in medicine but who ignorantly attempt to treat patients and to heal the sick.[6]

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—Third Weekly Meeting

II. Inflammations of the Skin (Continued)

Dermatitis Seborrheica: Symptoms, lesions, locations, course. Treatment.

Impetigo Contagiosa: Symptoms, lesions, characteristics. Diagnosis.

Dermatitis Herpetiformis: Symptoms. Varied lesions, course. Diagnosis.

Herpes Simplex: Locations, lesions.

Herpes Zoster: Lesions. Regional distribution. Treatment.

Lichen Planus: Symptoms and diagnosis. Treatment.

Lichen Ruber Acuminatus: Symptoms.

Acne: Age, frequency, characteristics, distribution, course. Acne punctata, a. papulosa, a. pustulosa. Acne indurata. Treatment: General, local, vaccine.

Acne Rosacea: Age, frequency, location. Rosacea, followed by acne. Third stage.

Sycosis Vulgaris: Sex, age, lesion, distribution. Treatment.

Psoriasis: Frequency, age, sex, heredity. Primary lesions, development, distribution. Psoriasis punctata, p. guttata, p. nummularis, p. circinata, p. gyrata. Treatment.

Pityriasis Rubra: Symptoms, diagnosis.

Pityriasis Rosea: Symptoms, diagnosis.

Society Proceedings

PHYSICIANS' CLUB OF CHICAGO

Regular Meeting held Dec. 2, 1910

Dr. James B. Herrick in the Chair

MEDICAL EDUCATION IN ILLINOIS

The Relation of the University to Medical Education

Dr. Edmund J. James, president of the University of Illinois: I became interested in the subject of education thirty-five years ago when a student of public administration in a German university. Organized society is greatly interested in the health of its citizens, because good health on the part of the body physical is the basis of any good health in the body politic or body social. The health of the citizens depends largely on a sound sanitary policy on the part of the state. A sound sanitary policy can not be carried out by the state without controlling and regulating in many ways the external acts of members of the society. The supreme importance of the medical profession in the history of human society is shown by the records of human experience. As the state developed a definite policy in regard to public health, it came face to face with two aspects of this very necessary development. First, a need of the results of medical education and research in order to carry out a definite policy in public health so far as it interfered with the regulation of the life of the people or the promotion of its common interests, and, second, the necessity of providing for the promotion of the health of its individual citizens outside of the realm of government interference. In order to carry out its sanitary policy, the state needed well-trained servants. The medical men who are going to be good advisers of the government in its sanitary policy, must be men of wide outlook and of great experience. They must be statesmen as well as physicians. Therefore the physician should be a man of liberal education. Twenty-five years ago Dr. William Pepper, provost of University of Pennsylvania, appointed a general university committee to take up the subject of the better integration of the professional schools of the university with the college and technical schools. I was associated with the subcommittee on the medical school, and recommended at that time that the university require for admission to its medical school a completion of the sophomore year in the college of liberal arts, and that a medical course of five years be inaugurated, the first two of which, corresponding to the last two of the college course, should be given to the study of the underlying sciences of medicine—chemistry, physics, biology, anatomy and physiology; that the last year should be devoted to hospital work and the two intermediate years to clinical instruction. I was convinced that, on the whole, the Germans had worked out the best scheme of medical instruction. This scheme consisted, first, in a very thorough, vigorous, intellect-developing secondary school course, extending in theory from the ninth to the eighteenth year of age, extending in practice from the ninth to the nineteenth or twentieth. With this preliminary education the student was permitted to begin his medical study. At that time it was possible for him to complete the entire course in a period of four years. That period has since been extended to five years. But even in that day the desirability of a student spending a year in hospitals immediately on passing the state examination for the practice of medicine was so generally felt that every aspiring youngster took such a year, if it were feasible for him to arrange it.

The future physician should be an educated and cultured gentleman, able to do his part as a thoughtful citizen of a democracy in the support and development of our social and political institutions. Physicians, if of the right type and inspired with the right ideals, may do more to raise social and political standards than members of any other profession.

He should be trained in a thoroughly scientific way. On the basis of this scientific training should be reared the superstructure of the practical application of this knowledge to the treatment of human disease. If the university will set before the community and insist on a standard of: first, a liberal education; second, a thoroughly scientific training; third, a practical training, then it will have done all that it can do toward preparing and sustaining a medical profession for this great work in the community and the state. I have been greatly pleased with every passing year to see some approximation toward this ideal. I believe that it is fundamental to any possible organization of medical education in this city or this state, that the State of Illinois as a unit should get behind this cause. The state should be supporting medical research and training just as completely and fully as it is supporting agricultural research and training, or engineering research and training, or legal research and training. If we all pull together and get the state to take this initial step, we shall have made the most important advance in this subject which has been thus far registered. For my part I am willing to sacrifice some other things in which I am greatly interested, or at least to postpone adequate provision for these things, in order to make this great step in advance.

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[5] Janeway, T. C.: The Journal A. M. A., Nov. 19, 1910, p. 1828.

[6] Whery, William P.: Before the Fort Wayne (Ind.) Medical Society, January, 1900.

If the commonwealth of Illinois will begin the policy of supporting medical research and medical training through the University of Illinois, I believe we shall have made another great step forward toward the time when the City of Chicago will be a recognized center of medical research, medical training and medical skill second to none in this country or, indeed, in the world.

How Can Illinois Obtain Higher Standards of Medical Education?

Dr. F. F. Wesbrook, dean of the College of Medicine and Surgery of the University of Minnesota: The health of the individual is not his concern alone; public health is the concern of the public. The state has an interest in every man's condition of health. The means which the individual employs to preserve his health or to cure disease is the business of the public just as much as is the financial standing required for taxation or compulsory schooling of the individual. The public should demand that it be protected against dishonesty, ignorance and incompetence on the part of those whom it would trust with the care of its personal and public health. Everything in which medicine plays a part is public business.

The physician should be a teacher. He should be trained what to teach and how to teach. The honest scientific medical man should always be able to make clear and logical to the layman the basis of his action or his advice in both private or public practice. To bring about results in the various lines of medical activity, we must supervise, first, the foundation of instruction preparatory for medicine. Second, there is the medical training. No matter what specialty is provided, a general knowledge of medicine is essential. Third, a further training in the particular specialty to be taken up.

As to pre-medical training, a knowledge of physics, biology and chemistry is very essential and the acquirement of a modern language is desirable. A knowledge of ethics and of psychology is useful; also a knowledge of the duties of the individual to society as a whole, and that means a knowledge of economics. This is necessary for the individual whose later studies are to be confined to pathologic or perverted structures and functions, whose practical work in life will consist in giving advice and treatment which may call for a readjustment of the habits of the individual. Since medicine of the future will require a great many trained specialists, the medical college should be prepared to offer all students some broad general instruction in many lines not heretofore included in the medical curriculum. The student should receive sufficient information to select wisely his future field of activity and acquire his knowledge and experience before entering that particular field. We must have special training for those who are to become specialists in certain branches, such as surgeons, medical health officers, medical school inspectors, sanitarians, superintendents of hospitals, and medico-legal experts. For all these specialties the university should be the clearing house. A university education is surely a state function, and a state university can and should be made the experimental arm of the state service.

In Minnesota our course has been increased, so that now we have two years of academic work and five years of medical work. All students who take the fifth year must spend it in a hospital approved by the state. These hospitals will be standardized and required to have certain laboratory facilities, to keep proper clinical records, and to do scientific work. We expect also to have courses in public-health and medical school inspection in the university. We hope to have a department of hygiene developed under the auspices of the medical college, and, if the need should arise for it, to have a school or college of public health as distinguished from a school of medicine.

DISCUSSION

Dr. Arthur Dean Bevan: I have been asked to open the discussion on these papers on the subject of the needs of Illinois in medical education, and the method of obtaining higher standards of medical education. Before we answer either of these questions, let us see what medical education means to-day not only here in Illinois, but in the United States and in the world. Medicine of to-day is a different proposition from what it was twenty years ago. At that time it was a mass of empirical facts, with very little scientific basis. To-day medicine is just as much a science as is chemistry, physics, or any of the sciences taught in a university, and it has developed into a great mass of useful knowledge. To-day medicine demands a thorough training in order to convert a student into a competent practitioner, a competent medical teacher, or a competent research man. That training as a minimum means a thorough secondary school training; a thorough training in the pre-medical branches of chemistry, physics and biology; a thorough training in the medical school, mostly laboratory work in anatomy, physiology, pharmacology and pathology; a thorough training in the clinical branches of medicine, obstetrics, surgery, and all the specialties. It means, furthermore, besides the course in a medical school, a training that the student can acquire only by spending at least one year as an intern in a hospital. That is practically the conception of medicine to-day in Germany, in Austria and in England. It is the conception also in most of our better schools.

Here, in this country, we have 130 medical colleges. A few years ago we had 166. Of these 130 medical colleges thirty-eight this year required of their students this preliminary training in the pre-medical sciences in addition to the four-year high school course. In these thirty-eight medical schools most of the students also obtain a year's experience in a hospital. I should like to see the hospital year made compulsory by every medical school.

I have shown the general conception of what medicine is to-day, and what a medical education means. Let us turn to the State of Illinois. All the medical schools in Illinois are located in Chicago, and this state has more medical schools than any other state or country in the world. Thre are now sixteen institutions in Chicago which turn out graduates who bear the title of doctor. Of these sixteen colleges, there are five which turn out doctors who legally, at least, are limited in their practice, and there still remain eleven schools which turn out doctors of medicine. Of these eleven medical schools, even on a very lenient marking only six could be included in Classes A and B by the Council on Medical Education which for nearly six years has been conducting an extensive study of medical education in the United States. Only three of these were accepted according to the Carnegie Foundation report. There are, therefore, on this very lenient marking five medical schools in Chicago which the Council on Medical Education could not under any circumstances include among acceptable colleges. These five medical schools are deficient in most or all of the following: Their preliminary requirements do not meet the standard of the medical practice act; their medical course is not strictly graded; the number of expert teachers is too limited or entirely wanting; adequate laboratory facilities are lacking or not used; important laboratory branches are not taught; dispensary and hospital clinical facilities are seriously deficient, absent or not used, or the school is to a large extent a commercial enterprise conducted for what profit or prestige there may be in it for its professors, or it is kept alive by the employment of misleading advertisements or by methods inconsistent with the maintenance of fair educational standards.

In other states reasonably high standards of medical education have been adopted and the present standards are strictly adhered to. A number of low-grade worthless colleges have been closed. In many other states there has been marked progress in obtaining better educational standards and better methods of regulating medical licensure. Illinois needs in medical education these things: fewer and better medical colleges; a more strict enforcement of the present requirements; a four-year high school education as a minimum standard for admission to medical colleges, and later a year or two of college work should be added to the preliminary requirement, this to include physics, chemistry and biology. As an additional safeguard, a thorough and practical examination should be required of every candidate for license. With these changes, the other problems concerning laboratory, dispensary and hospital facilities, would more rapidly approach solution. Illinois should not lag behind, but should be a leader in upholding right standards of medical education.

All this is not so much an indictment of the state board, which is shown by existing conditions to be inefficient, as it is an indictment of the entire educational system of the medical profession and of the people of the state. The solution of this problem is simple. We need a university education to provide educated medical men for the State of Illinois, and we simply demand the protection by an efficient state board against the worthless commercial medical college and the diploma mill.

Mr. **Arthur Herbert Wilde** (Northwestern University, representing President Harris): Northwestern University takes pride in its medical school. It was the first to establish a three-year systematic course of instruction, and also a four-year course, and it did this at great sacrifices. We all stand for higher medical education. That involves several things. First, it involves better prepared students. Northwestern University will require in the Fall of the coming year (1911) a two-year college course as a preparation for the medical course. These two years of college work will better prepare the student for his life work. Besides the well-prepared student, however, we must have well-prepared teachers. We want also more of the German patience and spirit of investigation. We must have complete laboratory facilities such as few schools possess at the present time. We must have certain enthusiasm for the work. I really believe we never shall prepare students and teachers and good laboratory men without the real spirit of higher medical education which is found in enthusiasm. Every school ought to have such laboratory equipment as the University of Chicago provides for Rush Medical College. It ought to have such endowment as Northwestern University has just received from Mr. Patten, who has given two hundred thousand dollars for the purpose of advancing medical research work, and every medical school should have also such enthusiasm as has been infused into the medical school of the University of Illinois by President James. Every school must have endowments. Medical schools are going to furnish a more expensive education, and this expense must be provided for by resources entirely outside of the fees of students. As to the request that is being made by the state university of the legislature Northwestern would say that an appropriation of one hundred thousand dollars is too small. If the state university takes up medical education in a thorough-going manner, it ought to ask a much larger grant.

The state university in its expansion work in medical education might provide lecturers to go from place to place and give lectures in preventive medicine, or first aid to the injured, or some preliminary steps that should be known in every household before a doctor arrives. Public sanitation and domestic sanitation should be taught the people as freely as they are taught agriculture. The City of Chicago should have a Pasteur institute or a Rockefeller institute of research, something as great as either. The resources for the establishment of such an institution in this state are as great as can be found anywhere in the world. The faculty or trustees of Northwestern University would welcome and appreciate as much as any one a college or institute of medical research within the present state university. We have a hearty interest with you in the progress of medical study and medical research, for we are here for the common purpose of enlightenment of the state, and we want to serve our day and generation in our way just as faithfully as we hope the other institutions will serve it in their way.

Dr. **Harry Pratt Judson**, president of the University of Chicago: When we consider the training of young men for medicine in the coming days, we must bear in mind that we have made a tremendous advance in science in the last few decades. Never in the history of the world has science moved so rapidly as now. A young man who is to be a physician must, therefore, have a sound training. A highly trained expert medical man is much more than a mere practitioner. He knows what is going on and how to lend a hand in the right place in the development of modern progressive society, and there will be, therefore, from the highly trained physicians of the future those who will be leaders of social development. There will be, I fancy, a smaller number of men whose genius lies along the lines of scientific medical research. Of course, physicians in general will do more or less of that, but there will be some few who are so trained and who are so expert, and whose enthusiasm is so great, that they will devote themselves, heart and soul, to this one fascinating, fruitful line of medical development. We need such men. In the years to come the advance of medical science will lie largely in the hands of such men. The amount of training to be given young men in these lines cannot be adequate with less than two years of college work as a foundation, and that I believe to be the minimum to-day in the minds of the best men who are connected with our medical schools. It is more important that medical schools should have a small number of properly prepared students than that they should have a large number of ill-trained students. The men who take more time in preparation will be the men of standing in the community.

Rev. **H. S. Spalding** (Loyola University): With regard to raising the standard of education, we believe in it. We look on Germany as the country that fits in perfectly with our system of education, and any standard that reaches toward that will meet with our approval. I want to say for Loyola University that we have as high ideals as any, and we are willing to work with you and for you in the enforcement of preliminary standards.

Mr. **W. D. Atmatter** (member of the Legislature of Illinois): This demand for a higher education is serious and ennobling. The king of the corn market (Mr. Patten) gave two hundred *thousand dollars* to Northwestern University for higher medical education, and I propose that the State of Illinois, which yields a larger corn crop than any other state, should at least give that much for this worthy purpose.

Mr. **Walter Clyde Jones** (state senator): I was surprised to find how important it is that the advocates of legislation and its opponents should be in Springfield. If the Illinois State Medical Society and other medical associations are *in favor of definite legislation*, it is important not only to educate public opinion so that the people will support the physician, but also to send men to the legislature to appear before committees of that body to educate them. It is impossible for any member of the legislature to grasp the important features of the innumerable bills presented unless specialists in the *particular* subject matter appear before the committees.

Dr. **G. W. Webster**, president of the Illinois State Board of Health: A few years ago I read a paper before the National Confederation of State Medical Examining and Licensing Boards, in which I proposed that the entrance requirements of medical schools should be one year of work in addition to the high school course. It was adopted. I had a conference at the same time with the Council on Medical Education of the American Medical Association in Boston, and told them what was to be done. It was generally understood that this one-year requirement was to be demanded as soon as the conditions would warrant it. In order to prevent the State Board of Health from demanding any such standard, the Legislature of the State of Illinois, at the last General Assembly, took out of the hands of the State Board of Health the power and authority to establish entrance requirements to medical schools. That standard was established by the people of the State of Illinois through the legislature, and was made a high school education. The State Board of Health has no authority or power to raise that standard in any way If you want to raise the standard to two years' work in college as an entrance requirement, in which I heartily believe, the first step is to repeal that part of the medical practice act which makes a high school diploma or a high school certificate an entrance requirement, and either leave it in the hands of the State Board of Health to make the standard what it should be, or else through the legislature make the standard such a standard as you demand.

Dr. JAMES A. EGAN, secretary of the Illinois State Board of Health, Springfield: There has been considerable said to-night regarding the State Board of Health's lack of enforcement of the law and of the structure of the law The State Board of Health has limitations of power which have not been brought out, neither has reference been made to the law under which the State Board of Health operates, except in the remarks made by Dr. Webster. Reference was made to the report of the Carnegie Foundation and to the work of the Council on Medical Education of the American Medical Association, whose reports differ on Illinois Mr Flexner came into Illinois and dropped off in Chicago in April, 1909, inspected thirty four schools in the state, inspected our medical schools, and condemned every school in Illinois, except one He even found fault with that particular school He condemned the College of Physicians and Surgeons, the Northwestern University Medical School, and other schools, and pronounced Illinois "a plague spot," for the reason that these schools prepared students in contravention to the state laws Of the schools condemned by him, four of them are now recognized by the Council on Medical Education of the American Medical Association Who is right, Mr. Flexner or the Council?

Taking up the matter of preliminary education, Mr. Flexner states that "scarcely more than thirty of the one hundred and fifty five medical schools of the United States enforce a definite entrance requirement" He states further that "similar conditions are repeated in Canada where out of the eight medical schools, three are without enforced preliminary requirements" Mr. Flexner's strictures on the teaching facilities are no less severe According to his report, only some thirty of the one hundred and fifty five medical schools 'are now fairly equipped with the necessary laboratories" "Fewer than thirty enjoy acceptable hospital facilities" He states further that only about twelve of the one hundred and fifty five medical schools of the country "have the clinical facilities that they need" It would appear from those statements that conditions found in Illinois are duplicated in other states

Dr JOSEPH ZEISLER I believe there are a great many who will agree with me when I say the Flexner report was in many ways one of the most important, one of the most helpful things, that could have happened to the progress of medical education in Illinois and elsewhere Flexner may have been a little bitter or severe in some instances, but was the report really unjust, when we compare the status of medical education in some of the best schools in this country with that elsewhere, as, for instance, in Berlin, Vienna, Bonn, etc? Do we not occupy a much inferior position, taking the average medical school in this country, as compared with European schools? I do not wish to enlarge on this thought, except to say that I believe this report, although it struck the school with which I am connected, was a good thing Let me cite one single instance of medical education in Chicago I have had occasion for four years to watch the medical career of a person who went through a college in Chicago which has the right to turn out doctors It was an evening school That person could not write English grammatically, nor German grammatically He is a most illiterate person, yet he was accepted by that college, passed through school by paying ten dollars every month, received the degree of "doctor of medicine," and came up for the state board examination Gentlemen, it is up to the state board, in the examination of persons who are absolutely unfit, to exercise that check which is absolutely necessary for the protection of the people of the State of Illinois I ask you, gentlemen, does the State Board of Health of Illinois ever exercise such a check? Is it not possible for such people to slip through on a written examination, which means very little indeed, and be let loose on the populace?

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Nineteenth Annual Meeting, held at Richmond, Va,
Oct 31 Nov 4, 1910

(Concluded from page 2174)

Venereal Prophylaxis

Col L. Mervin Maus, M C, U S Army: The collapsible tube containing 25 per cent calomel and 75 per cent lard has been in use in the Department of the Lakes for several months with gratifying results The great prevalence of venereal disease in the Army led to the adoption of the "K" package, which was large and cumbersome, and which the men would frequently not use, but would throw away The collapsible tube has a capacity of one dram only, is small, compact and neat At the military tournament held in Chicago in July these tubes were supplied to the troops with the result that although they were in the city two weeks and surrounded by and having intercourse with the lowest class of prostitutes, not one of the men was infected, as demonstrated by a physical examination made after their return to their home stations During the time of the maneuver camp at and near Fort Benjamin Harrison, Ind I had another excellent opportunity to observe the effects of the tubes as regards prophylaxis The troops of the regular establishment at this camp consisted of twenty one companies of infantry, eleven troops of cavalry, one company of engineers and one half a company hospital corps Each man had a physical examination a few days previous to their arrival, and a test was submitted of those suffering from venereal diseases All the organizations were supplied with tubes and the men were instructed as to their use At the close of camp the following statistics were obtained 504 men had had sexual intercourse 1,301 times, using the tube after each contact Of these men three reported gonorrhea and of these one made contradictory statements and the other two claimed that they had used the tube but did not understand it In addition reports were received from 302 men who had had sexual intercourse 763 times and had not used the tube As a result one man contracted syphilis, twenty six gonorrhea and twelve chancroids The proportion of disease in those who used the tubes was ½ of 1 per cent, while among those who did not use them there was 13 per cent of infection These facts are exceedingly significant, and I recommend that the War Department issue orders to the following effect:

1 That monthly lectures on general military and personal hygiene be required of medical officers to commands, not only for the purpose of educating the officers and men on these subjects, but to enable them to preserve their health against contagious and other preventable diseases

2 That weekly physical inspections of companies or detachments be made by an instructed non commissioned officer, under the direction of the company commander, in undershirts, drawers and bare feet, immediately after the Saturday morning inspection for detection of personal uncleanliness, physical defects, condition of the teeth and feet and contagious diseases, all men suffering from physical disqualification or diseases to be ordered at once to the hospital for the action of the surgeon

3 That three antiseptic tubes be made a part of the kit of the soldier and that the men be instructed in their use, with such orders as may be necessary

4 That soldiers found suffering from contagious diseases rendered preventable by the use of the antiseptic measures prescribed, be regarded as having disobeyed a sanitary order and held guilty of violation of the sixty second article of war.

Pneumonia in the Mexican Army

Lieut Col Enrique Jurado y Gama, C M M M, director of the Military Hospital at San Luis Potosi Pneumonia is a serious disease which has not diminished in spite of the progress of medicine, among armies pneumonia causes great mortality, most often pneumonia effects a spontaneous cure by the successful struggle of the organism, hyperpyrexia and biologic and chemical changes produced in the tissues are the principal causes of the happy termination of the disease, prophylactic treatment of pneumonia is indispensable; there is no specific remedy for the disease; blisters and antimony salts are useless and dangerous; bleeding is a powerful resource that must be applied in many cases and in different stages of pneumonia; digitalis, strychnin and cardiac tonics have hitherto proved most successful; morphin employed in the form and under the circumstances I have detailed, namely, on the fourth or fifth day, hypodermically, mitigates the exaggerated irritability of the respiratory centers, soothes the orthopnea, subdues pain and slows the respirations, which become deep and regular.

The Navy and Tuberculosis

Medical Inspector C. T. Hibbett, U. S. Navy, described the U. S. Navy Hospital for Tuberculosis, located near Las Animas, Colo., on the site of the abandoned Fort Lyon, which now has a capacity of 225. He advocates the immediate extension of the sanatorium to quarters for at least 500 patients, and the enlargement of the power-plant to provide for a further extension to accommodate 1,000 patients. The extension of living quarters should be in the line of iron bed cottages for ambulance patients. He further suggests that the general government establish a tuberculosis colony on such site as may be carefully selected for all its official patients, this colony to embrace patients from the Army, Navy, Public Health and Marine-Hospital Service and Civilian employees. For this purpose a tract of several thousand acres would be required, and on this all sorts of farming procedures could be carried on. Educational systems should be substituted for militarism in the government of the institutions, and the men should be instructed as to their preparation for future farm or other open-air life.

Camps of Instruction

A lively discussion followed the reading of the various reports from officers of the organized militia on the camps of instruction in which they served. Lieut. Col. Junius F. Lynch, Surgeon-General of Virginia, was unsparing in his denunciation of joint camps of instruction, calling attention to the unprepared condition of the grounds, delays and inefficiency on the part of the quartermaster's department, the lack of working incinerators and the failure of civilian employees to operate the incinerators which were in working order. He claimed that too much was expected of the organized militia and too little was done for them. He believed that state camps were preferable, and that in these camps, instruction could be given by officers of the regular establishment.

Captain Henry D. Thomason, M.C., U. S. Army, in charge of the Medical Department of the Division of Militia Affairs of the War Department, expressed the opinion that the benefit to be derived from joint camps of regulars and militia were too patent to require demonstration. The massing of regular and volunteer troops is for the best interests of both, and by such instruction the unfortunate sanitary conditions which prevailed several years ago in volunteer camps are now avoided.

Africa and the Tsetse Fly

Major Louis Livingston Seaman, U.S.V., New York City, gave a public lecture illustrated by stereopticon views on "The Sleeping Sickness and a Hunting Safari in Africa," in which he described the horrible cruelties practiced in German territorial possessions in Africa, and spoke hopefully of the time when the "Cape to Cairo" railroad and British rule would put a stop to these atrocities. In certain parts of the country the tsetse fly, whose bite transmits the sleeping sickness from the sick individual to a well person, abounds, but only within 150 yards of rivers or streams, not going beyond these limits. The fly is dangerous only where the sleeping sickness prevails. It is the transmitting agency. The incubation period of the disease is seventeen days. The infected person or animal loses animation, becomes weak, enervated and emaciated, and finally the sense of pain is dulled or lost.

Bubonic Plague

Passed Assistant Surgeon William Colby Rucker, U. S. P. H. & M.-H. Service, narrated in a most interesting manner the fight made in California against the bubonic plague and the connection of the rat and ground squirrel with the disease. The ground squirrel is the reservoir of plague germs but does not transmit the disease to human beings, but by its bite infects the rat, which in its turn, acting as a germ carrier, bites and infects a human being, who in due course comes down with bubonic plague. For this reason he advocates the extermination of both rats and ground squirrels, but considers the latter as a far greater menace to the community, as ground squirrels exist throughout the country, as rats are everywhere found, and as all that is necessary to start a season of bubonic plague anywhere is an infected ground squirrel or human being. He deplored the fact that for commercial reasons the presence of bubonic plague in California was kept secret so long and asserted that the disease has been smoldering in the United States for a decade. In his opinion the ratproofing of buildings was the most important factor in the solution of the bubonic plague problem.

Major Paul F. Straub, General Staff U. S. Army, told of the experiences with rats and bubonic plague in Manila, where a force of 200 men was organized to trap and kill rats, millions of which were destroyed.

Paybill for Marine-Hospital Corps

The association adopted resolutions asking that the paybill of the United States Public Health and Marine-Hospital Service be revised to correspond with those already in force for the Army and Navy.

Iodin in Military Surgery

Col. Nicomedes Antelo, Chief of the Surgical Service at the Military Hospital, Buenos Aires, delegate from the Argentine Republic, who was delayed in reaching Richmond, had prepared a paper on the use of tincture of iodin in the surgery of war. It was read. The following were his conclusions: 1. Tincture of iodin is the ideal skin antiseptic in military surgery. 2. It is desirable to add to the individual first-aid package a receptacle containing tincture of iodin to sterilize the skin at the wound of entrance and exit. 3. In sanitary formations, when a surgeon is present, the field of operation, in case of need, should be sterilized by the Grossich method, that is, washing the region of operation on the previous evening, an aseptic application to be retained until the patient is placed on the operating table and the application of one coat of tincture of iodin at the beginning of the anesthesia, and another when the patient is anesthetized. The hands should be treated with tincture of iodin and then decolorized with sodium hyposulphite, Meissner's method, washing with soap and afterward with alcohol at 90 F. for five minutes, should be employed when it is impracticable to use the Grossich method. 4. The supply of tincture of iodin to the sanitary formations at the front, should be calculated in accordance with its use as described.

AMERICAN ASSOCIATION FOR THE STUDY AND PREVENTION OF INFANT MORTALITY

First Annual Meeting, held at Baltimore, Nov. 9-11, 1910

(Concluded from page 2177)

Municipal, State and Federal Prevention of Infant Mortality

Dr. William H. Welch, Baltimore: The United States is particularly far behind other countries in organized attempts to solve the problem of infant mortality. The apathy in this respect is another of the many examples of the way this country suffers from the lack of a thoroughly organized and complete bureau or department of public health under the national government. Municipal health boards have only recently, and only in a very few instances, taken up work in this field with any energy or thoroughness. Work begun by private initiative can often be taken over later more successfully by municipal or state boards of health than if they were called on to initiate the undertakings. It is important to train and supervise midwives and regulate their practice. Between 80 and 90 per cent. of births in a certain class of the population are attended by midwives. The Maryland midwifery act specifies qualifications and requires registration. Its administration is in the hands of the State Board of Health. A school for the training of midwives is a great need in this country.

Report of the Committee on Birth Registration

Dr. Cressy L. Wilbur, Washington: Much has been done and can be done in the absence of reliable vital statistics to cut down the infant death-rate, but accurate vital statistics are indispensable to the development of an intelligent campaign of prevention. The paramount duty of an association for study and prevention of infant mortality to build up such an "intelligence department" is to give true and exact information for the guidance of active workers in this field of preventive medicine. Infant mortality cannot be stated, as adult mortality is, in ratio to the enumerated population. The infant death-rate must be computed as the ratio of number of deaths of infants under 1 year of age (exclusive of stillbirths) for every 1,000 children born alive. Births must therefore be registered as regularly as deaths. Because we do not register births in the United States, it is impossible to compute a death-rate for babies in any state or in any city in the United States in such a way as to be comparable with the infant death-rate of any other civilized country. Accurate vital statistics of infantile mortality are needed for individual cities, rural districts, states and nation as a whole. Accurate statement requires complete and satisfactory registration of both births and deaths. There is accurate registration of deaths for only about one-half of the total population of the country (55.3 per cent.) and even in states in which there are fairly good registration laws, the equally important or even more important registration of births is neglected. The blame is sometimes placed by health officers on physicians or midwives for failing or neglecting to register births. This is unfair, because the physicians and midwives are not charged with the enforcement of the registration laws, but to obey them. Only a few states have even approximately complete registration of births (90 per cent., or one birth omitted for every ten that occur). Tentative list, New England, Pennsylvania, Michigan and District of Columbia, Ohio and Missouri. Enforcement of the law an essential part of effective administration of any system of birth registration. Model law in force in Pennsylvania since 1905; Ohio, 1908; Missouri since 1909.

What the Obstetrician Can Do to Prevent Infant Mortality

Dr. J. Whitridge Williams, Baltimore: The obstetrician should care for the mother and child not only at the time of labor and the few weeks immediately following it, but should observe the patient throughout the entire course of pregnancy, and as long after delivery as may be necessary to insure her return to normal health. Pregnancy ending in an abortion or by the birth of a dead child is an economic and biologic waste. The live-born child must be put in the most favorable conditions for its further development. The obstetrician may prevent infantile mortality by prophylactic measures before and during pregnancy, by the proper conduct of labor, and by the care of the child during the first month of life.

The Duty of the Municipality in Relation to Infant Mortality

Dr. Joseph S. Neff, Philadelphia: Diarrhea and enteritis are terms suggesting no alarm, yet in 1909, in the registration area of the United States in every 100,000 population; 72.3 infants died from these causes, 70 per cent. of these deaths being preventable. In the same year tuberculosis, pneumonia and diarrhea and enteritis caused 43 per cent. of the total deaths from disease without creating any marked public comment. Assuming the mortality in the non-registration area in the United States for 1909 to be the same as in the registration area, much more publicity was given to 19,419 deaths from typhoid fever, in that year's record, than to the mortality of infants, which was 253,268, or a much larger mortality than in any other age period or from any single disease. More time and money has been devoted toward preventing the spread of tuberculosis of the lungs than toward any other health effort, yet the total mortality from that cause last year was 50 per cent. less than the mortality among infants. For economic reasons there is no better investment for a commonwealth than to care properly for the defective classes and provide institutional care for the feeble-minded women during the child-bearing period. I favor the passage of sterilization laws to prevent the illegitimate propagation of the species of the criminal and defective classes. The necessity for safeguarding against an inferior or polluted milk supply is evident. As an example for the benefit of the city councils, a campaign of education was conducted in Philadelphia in the section of the city thickly congested with a foreign population. Through a corps of physicians and professional nurses home instruction was given mothers in the care and feeding of their babies. Results showed 36 per cent. less infant mortality in the districts covered by the municipal nurses than in the rest of the city as compared with the preceding year, notwithstanding the fact that last summer was the most trying one on babies from weather conditions the city has had with one exception in thirteen years.

The Necessity for More Minute Study of the Causes of Infant Mortality

Dr. John S. Fulton, Baltimore: The report on infant mortality for 1908, given by the United States Census Bureau, shows that the total deaths in the registration area, under age of 1 year, were 136,432. Causes of earliest death were prematurity, malformation, injuries sustained at birth and syphilis. Convulsions are charged with 5,295 deaths under 1 year. Next come 76,903 deaths caused by whooping cough, diarrhea, diseases of the mouth, suffocation, acute bronchitis, broncho-pneumonia, measles, tuberculous meningitis, meningitis, diphtheria, scarlet fever, tetanus and pneumonia. Total number of deaths from diarrhea was 37,049. Largely through assistance of confederates, bronchitis and pneumonia killed 19,144 infants in the registration area in 1908. A study of sickness month by month, through the first year, will show that nurslings are naturally better defended than their older brothers and sisters from the infections of childhood, and due advantage being taken of this circumstance, these infections, together with bronchitis and pneumonia, can practically be ruled out of the mortality of the first year.

A Statistical Survey of Infant Mortality's Urgent Call for Action

Mr. Edward Bunnell Phelps, New York City: Infant mortality approximately averages about 130 deaths to each 1,000 living births in all civilized countries on the basis of the latest available official data—being almost half again as high in certain European countries. This single fact, the death of at least thirteen out of every 100 babies born alive, constitutes the moving cause for the organization of this Association and similar movements now taking shape in various foreign countries. Owing to the lack of national statistics of births, except in census years, the annual infant death-rates for this country as a whole are not yet available, but there can be little doubt that the infant death-rate in this country has undergone at least a slight decrease in the last decade. Despite that probable fact, as official returns for the city of New York and the state of Connecticut demonstrate, in the third quarter of the current year the infant death-rate of 169 per 1,000 births then registered in the city of New York was precisely the same as that for the corresponding quarter of 1909, and the infant mortality of the entire state of Connecticut was 193 per 1,000 births in the third quarter of 1910, as against 192 per 1,000 births in those months of 1909.

Medical Prevention of Infant Mortality

Dr. L. Emmett Holt, New York: Excessive infant mortality is one of the large problems of society. It can never be completely solved because its two most important underlying causes, poverty and ignorance, will never be removed. At most only partial success is possible. Desired results can be reached only by the cooperation of many agencies. At the outset there is needed an intelligent and comprehensive view of the subject as a whole. This will make it possible to separate the causes which are preventable from those which are, in a sense, inevitable. We must first know the facts of infant mortality. This means better vital statistics in the city and country. We need especially complete birth reports, more accurate statements regarding the causes of death, especially in stillbirths and deaths in the early weeks of life. What is more difficult to get at is the causes which underlie these facts. This must be the work of the medical profession. It is only by discovering and influencing the underlying causes that marked results can be accomplished. It is the duty of the profession to concentrate public attention on the large factors which contribute to infant mortality, to insist on a more thorough study of these and suggest means by which they may be reduced. A broad, unified, comprehensive plan should be made at the outset in which all philanthropic agencies shall work together for the accomplishment of the main purpose.

Do Medical Schools Adequately Train Students for the Prevention of Infant Mortality?

Dr. Ira S. Wile, New York: Medical schools fail to give adequate training of medical students to enable them to fight the conditions giving rise to such a tremendous portion of the total mortality. Pediatrics is, at present, treated generally under the head of general medicine, though infant mortality involves many conditions which are not comparable with any ailments in adult life. It is generally admitted that one-half of the infant deaths are preventable. Medical schools do not give sufficient attention to the subject of hygiene or prophylaxis. Education is conceded to be the greatest factor in the prevention of infant mortality. Medical schools do not so train men as to make them capable of teaching nurses, interns, mothers or philanthropists. The Council on Medical Education failed to make adequate provision for hygiene or pediatrics in mapping out its ideal medical curriculum. There is a total failure to grasp the underlying social conditions on which infant mortality rests in large part and which physicians must be able to attack in order to prevent infant deaths. The social causes of death are not considered in medical schools. The present teaching of pediatrics is inadequate, the teaching of hygiene is still more lacking, the teaching of the relation of infant diseases to social conditions does not exist. The problems of prevention lie in these three fields and, as they are scarcely entered by medical schools to-day, there results the constant addition to the medical profession of men ill trained and incapable of being of great service in the work of preventing infant mortality.

DISCUSSION

Dr. William H. Welch, Baltimore: There is no question that the great need of our medical schools in this country is the establishment of satisfactory training in preventive medicine and public hygiene. We hear equally urgent pleas for almost every subject in medicine. We cannot send the student out adequately trained in any branch; the most that we can hope to do is to give him broad general principles and put him in a way to continue his education. He will not by any possibility be trained in public health or in any aspect thereof when he passes from the medical school, but he should know the importance of the subject, and if his interest lies in that direction, he should be in a position to carry out his functions. But it would be a great misfortune if a medical school without adequate facilities pretended to train men in public health. These results cannot be obtained without large resources.

Dr. Frank Warner, Colorado: I was surprised to learn that the record of the midwife in New York in the prevention of ophthalmia neonatorum is better than that of the physician. If the result of the teaching already instituted is that the physician does worse than the untrained midwife, what may we look for when the teaching is still greater?

Dr. Baker: One reason why there is less ophthalmia neonatorum among the New York midwives' cases than among the physicians' cases is the fact that during the past two years silver nitrate solution has been used by the former in the eyes of all new-born babies, and as far as I have been able to investigate, this practice is not so prevalent among the medical profession.

Dr. W. D. Hoskins, Indiana: It seems to me that some further explanation might be made of the statement that teachers of diseases of children are the ones deserving of criticism for the lack of time and opportunity in the courses. I rather question the wisdom of such criticism. It is not that these teachers would not like to have more time, greater facilities and better opportunities to elaborate on these preventive measures, but it is impossible to accomplish better results in a short time and with limited means. As far as I have been able to observe they are careful, skilful men who comprehend the magnitude of the social problem, as well as the details of their teaching. And, as far as I have been able to observe, the students who are going out comprehend these things in a greater measure than we might infer from Dr. Wile's paper. As with other specialties, it is impossible to give the department of pediatrics all the time wanted, but a creditable showing is being made by practically all of the medical schools. As far as I know, Johns Hopkins is the only one in which the subject is elective.

Dr. Ira S. Wile, New York: I trust that Dr. Welch has not misunderstood that I am advocating that institutions give courses in public health simply to teach how to prevent infant mortality. Since between 40 and 50 per cent. of infant mortality is preventable, the stress of work should be put on preventive medicine. As to there being less ophthalmia among midwives than among physicians, this may be due to the fact that pediatrists do not talk so much about this subject. As to the criticism of Dr. Hoskins, I found that the average time given in a course of pediatrics was sixty hours, the greatest 120 hours, the smallest none. I am not blaming individuals; I am criticizing schools that fail to give this course in their curriculum.

Erroneous Ideas of Infant Mortality and Methods of Reducing It

Dr. S. W. Newmayer, Philadelphia: In most campaigns there is an effort to educate the mother with a well child, the care of the sick infant being overlooked. Every department of health should have its "publicity bureau," under the charge of a competent newspaper editor, one with at least a working knowledge of medical subjects, especially of those which relate to public health. Gastro-enteritis, which causes most infant deaths, is chiefly due to improper feeding. The feeding of the infant is the responsibility of the physician attending at birth, but is more often left entirely to the mother. The efficiency of health departments in reducing infant mortality would be greatly augmented by the employment of a corps of visiting nurses, or of specially trained physicians, who could give the necessary instruction to mothers in their homes or who could give individual care to the sick babies. The objections made to such measures, on the ground of paternalism, are unfounded. If the infant is not receiving proper nourishment and care, whether through ignorance or neglect, it is the duty of the municipality to give all the personal care and attention it can give.

Vaccine Treatment in the Prevention of Dysentery in Infants

Dr. William Palmer Lucas, Boston: In the series of cases studied at the Infants' Hospital, Boston, 100 infants received vaccine in graded doses, from one to three injections being given to each patient of a vaccine made up of the Flexner-Harris dysentery bacillus. The vaccine was not used as a means of treatment, but simply as a preventive measure. All of the patients were infants who had had no sign of dysentery at the time of receiving the injections. The reactions in these cases were studied, and a close watch was kept to see if they developed any acute intestinal trouble throughout the summer. One or more bacteri ologic examinations were made of each of these cases, and also a parallel series of cases was studied bacteriologically to see how frequently the dysentery organism occurred in this class of cases. The work is merely suggestive and no definite conclusions can be drawn. No bad results were obtained.

The Education of the Father an Important Factor in the Prevention of Infant Mortality

Dr. William Palmer Lucas, Boston: We must not overlook the importance of educating the fathers, especially of the poor, congested districts, along the lines of the principles underlying the prevention of infant mortality, for, as the social worker has learned, the father in the families of our foreign population is the actual head of the household. There were several classes formed during this past year under the direction of the Milk and Baby Hygiene Association for the instruction of the fathers in the districts in which several of the milk stations were situated. These met with a fair amount of success and this form of work promises to be of considerable value in gaining the confidence of the family which is of great help in obtaining the best results in a case of sickness among them.

DISCUSSION

Dr. Herman Schwarz: With regard to the education of the fathers, the following figures are interesting: In 210 families where both parents could read, 710 children were born, and there were 135 deaths, or 190 deaths per thousand born; where the parents were illiterate, the death-rate was even higher, so it is shown by statistics that the care of the children is better where one or other parent, or both, could read; it does not seem to make much difference which parent can read. In families where neither parent can read and where there is intense ignorance, the death-rate is much greater.

Mrs. William Lloyd Putnam, Boston: I believe that the fathers are ready for education. Last year a committee of the Municipal League carried on an exhibit every afternoon and evening in Boston. We had a mother with her baby, a doctor and a nurse, and the doctor lectured to the crowds that collected. At times it was interesting to see that there were three or four times as many young men present as women, evidently young fathers. It was evident that these young men were there because they were fathers and anxious to learn.

The Possibilities of Maternal Nursing in the Prevention of Infant Mortality

Dr. Thomas S. Southworth, New York: Maternal nursing not only offers new-born infants the best chance of surviving the first year, but lessens the mortality of succeeding years. There are sufficient and insufficient reasons for putting the baby on the bottle. Few women refuse to nurse, but too many who are anxious to do so are prevented from doing so by ignorance or bad advice or misinterpretation of the baby's condition. The stools and behavior of infants getting scanty breast milk lead to a mistaken belief that the milk is bad. Early weaning of infants is unjustifiable until intelligent effort has been made to build up the mother and utilize the breast milk as a part, if not all, of the infant's food. There is no adequate investigation and little scientific or popular knowledge of the function of human lactation. Responsibility for this rests on the state, the educator, and largely on the hospitals for infants and nursing mothers, for these latter do not, as a rule, make the best use of their opportunities for encouraging and disseminating knowledge on this subject.

Method of Determining the Influence of Medical Philanthropy in Reducing the Morbidity and Mortality of Infants

Dr. Henry L. Coit, Newark: Agencies employed for the reduction of infant mortality have directed their efforts along different lines. These are: medical work in hospital wards and clinics where infants are treated; milk dispensaries and consultations independent of hospital supervision; philanthropic association work aside from hospitals and dispensaries; municipal agencies which employ nurses to teach infant hygiene in the home, and state and federal agencies which, by ordinance and law, attempt to influence mortality by determining statistics, regulating the food supply and making more sanitary the homes of the poor. The value of each of these methods of work and their effect on mortality have been variously estimated by those who are engaged in this work with a tendency to over-estimate the value of the special feature in which they are interested. When these various methods of work are combined under the same direction or supervision, it would be desirable if some simple system could be formulated for the collection of facts and statistics which would show the *relative value of each kind of work in its* influence on the reduction of infant mortality. Statistics are of no value unless they determine how far we have influenced or improved the conditions affecting the care, the physical condition and the living powers of infants. The percentage plan of scoring has been employed to determine the status of *social, scientific and commercial investigations;* but no comprehensive scoring plan has been adopted which would include in its scope all the conditions which influence the care, the physical condition and the living powers of the infant. The method herewith presented, which consists of a statistical score card, is designed for a careful collection of facts to determine the influence of environment, of management, of nourishment and of morbidity on the viability of the infant and by a graphic chart to show the improvement in viability during a given time through the activities of medical philanthropy and educational work directed to the betterment of the conditions which influence infant mortality.

Educational Prevention of Infant Mortality

Dr. Helen C. Putnam, Providence, R. I.: In a democracy, governmental, medical or philanthropic prevention of infant mortality must have intelligent popular cooperation to be successful. This means popular elementary education in the essentials of hygiene, sanitation and the laws of life. Public schools are the universal agent for laying this foundation and we are dissatisfied with their results, our vital statistics being the test. The annual reports of most normal schools emphasize the claim that they are professional. Their health practices and instruction are no better than we find in public schools. They have the same humanitarian need to be standardized as medical schools. Their annual reports exaggerate the value of their instruction in the foregoing respects as often as medical schools exaggerate, according to the Carnegie Foundation Report. Not one of the forty normal schools studied had well-balanced courses in healthfulness of school and of home, in health of the individual and of the community. Their work is largely determined by examinations for licenses to teach. Ninety-three per cent. of the questions are on anatomy. Less than 7 per cent. are on function or on health. I have seen examination papers with none. Students say frankly they do not think the instruction worth while. Examining boards—the pace-makers—can promptly bring normal instruction up to modern needs by suitable questions and tests formulated by health officers, biologists, and school or visiting nurses.

Resolution

The following resolution was passed by the Association: Healthy parents, right customs and wholesome environment being essential factors in preventing infant mortality, be it

Resolved, That boards licensing teachers for public schools should give as detailed tests in elementary hygiene, sanitation, and biology as are given in mathematics or language.

The Study of School Sanitation and Hygiene

Dr. Herbert Burnham Davis, Pennsylvania: Good parentage is sometimes handicapped by school as well as by home conditions. Dental examinations of children in the practice school by a dentist and medical examinations by a physician are attended by our normal students, who assist in making the records. Through discussion and study of these records an attempt is made to plan a simple outline for examinations by the teacher in an isolated school. Practical demonstrations are given in using disinfectants, cleaning floors, ventilating. Study of backward children in a psychologic clinic is important, as is that of mechanical factors in school seats causing restlessness and physical defects. All this work has a definite practical direction by practical methods. Normal schools should require all this from every pupil and also studies of sanitary law, sex instruction in public schools, industrial hygiene, and hygiene of the home.

DISCUSSION

DR. HELEN C. PUTNAM, Providence: I have visited at least 600 schools and there were only 210 thermometers, 70 of which were broken and out of order, and the remaining registered in winter weather from 71 degrees to 80. Also bear in mind that there are schools in this country, practice schools connected with normal schools, which are sending out thousands of trained teachers, where I have found the floors oiled with an oil that was put on thick to hold the dirt that fell on them. While it kept down the dust, this was educating the child in an atmosphere filled with the odor of oil, and teaching him to go into the schools without cleaning his feet. These are indications that standard methods of teaching should be urged in this Association.

DR. C. E. A. WINSLOW, New York: From the sanitary standpoint, teachers should have a fundamental training in biology and physiology; second, there should be a course on the relation of the individual to his environment in the spread of disease; third, there should be a practical course, such as has been so admirably described, in school hygiene and sanitation. A method of determining the carbon dioxid in the air should be taught. This course should include also inspection of school buildings, a study of the waste disposal systems, the lighting, desks, etc., of as many schools as possible. We have gone in these campaigns for public health about as far as we can go without the aid of the teachers in the public schools. Some of the schools have already made great progress in solving this problem.

MISS MOORE, Trenton: Every year I find in my class in biology students who are addicted to certain habits, such as sucking the end of their pens or pencils, chewing the finger nails, etc. A good deal of discussion was given in the class of the possibilities for danger in such practices, but frequent lapses would occur. With the cooperation of the class, some experiments were tried. The relation of germs to disease was illustrated by drawing the chewed end of a pencil across the surface of agar, or by making thumb prints on the agar, etc. The results were demonstrated. Altogether, the demonstrations served their purpose in not only emphasizing and giving force to the discussions on this subject, but in introducing into the discussion an element of reality, of tangibility—an element very desirable, as I found, in our campaign against dirt.

DR. HELEN C. PUTNAM, Providence: The chief organisms in dust, those that cause disease, are rather promptly killed by air and sunshine. In the public schools with high temperatures and dusty atmospheres, tuberculosis is invited. The death rate from tuberculosis among teachers is very much above that in any other profession. Reports show that between one-fourth and one-half of the children have latent tuberculosis. Children who die from scarlet fever or diphtheria, where tuberculosis is not suspected, have by examination been found to conceal tuberculosis. The Roentgen ray and the tuberculin test also often reveal latent tuberculosis.

DR. C. O. PROBST, Columbus, O.: It is a question whether the school teacher will be able to fulfil all that we expect of the public schools in teaching health matters. I am inclined to think that we must have a specialist, a school physician, who must have medical education and also special knowledge of the child. I do not believe it possible for a public school teacher to recognize beginning cases of scarlet fever, diphtheria, or other contagious disease. There should be a daily inspection of the schools, and a school physician could accomplish much. I think the day will come when in every large school building in this country, there will be, along with the superintendent, the school physician, devoting all his time and attention to looking after the physical welfare of the child, even to the extent of interrupting its studies when he considers it necessary for the child's health.

The Study of Home-Making

PROF. FLORA ROSE, New York: Home economics where well taught goes straight to the root of infant mortality. It instructs directly, openly, specifically in those things relating to the welfare of homes. Our educational system should consider every pupil as a potential parent. We have normal courses in caring for and feeding babies; we consider mortality rates as affected by abnormal industrial conditions, disease, heredity, environment. We have propaganda work through lectures even to remote country districts; and through free literature dealing with care of infants and of homes. Many urgent requests for instruction in these subjects come to departments of home economics. When graduates are more numerous they will effectively mould public standards of home-making and parenthood, and they are already becoming valuable instruments in preventing infant mortality.

PROF. ABBY L. MARLATT, Wisconsin: In Wisconsin "humanics" comes in the junior year when the students have laid a foundation of bacteriology, biology and physiology along with their household management. We discuss heredity, the influence on the child of alcoholism and other drug habits in the parents, the relation of social evils and their diseases to infant and child mortality and degeneracy; methods in different countries for saving babies; the French system of pensioning expectant and new mothers so that they may be properly housed and fed; education for better parenthood, prevention of vice and of drug habits, of bad housing, and political mismanagement that allows it. We also discuss adolescence, child labor, and vital statistics as related to home-making. The central thought of our four years' course is—conservation of human life by improving homes and cities and individuals so that future generations may reach higher levels of efficiency than those preceding them. The University of Wisconsin is at the head of the state's public school system, and this department is closely related to "domestic science" for the children which we consider very much more than "cooking and sewing."

DISCUSSION

DR. CHARLES FORD LANGWORTHY, Washington: In every state there is an agricultural college which is quite largely supported by government funds, and of the fifty odd colleges of that sort in the United States two-thirds give courses in home economics. It seems to me that of the problems concerned with infant mortality none could be more important than these matters of proper food. We must have fundamental facts available regarding nutrition, and our work has been to gather these facts. This information has been published in leaflets. We have been trying to perfect an instrument with which to study the relative ease of digestion of different foods. Another thing which I should like to do is to study the great problem of overwork, and to study more thoroughly the problems of increasing the efficiency of the housekeeper so that she would not be broken down from overwork.

The Study of Biologic Science

PROF. JESSIE PHELPS, Michigan: We have offered for three years a course in physiology of sex and development. Such biologic instruction is to establish through teachers and schools higher ideals of parenthood. Two hundred and fifty-one have elected it, and nearly all are teaching. The plan is to give scientific setting for personal and sex problems which every teacher has to meet in school. About one-half the time is spent on life histories of familiar plants and animals from lowest to highest, including man, so that the principle of evolution is deeply instilled. Much time is given to the embryology of the chick with demonstration of incubated eggs. This method allows exposition of all the cardinal doctrines of biology and gives a setting for the facts of human reproduction, fundamental character of reproductive processes throughout Nature, place of individual in race, advantages of sex, origin of sex, heredity, continuity of germ plasm, and evidences of evolution. The basic facts of embryology are necessitated by such a treatment, and the way is thus opened for introduction of the more important topics of human sexual hygiene, standards of courtship and marriage, parenthood, eugenics, diseases spread by prostitution, children's vices, and instruction of children in matters of sex. Graduates are urged to form parent's clubs. They report finding applications for Nature study not before realized, and appreciating much better the far-reaching effects of school sanitation and children's habits.

Dr. Willard S. Small, Washington: Vitality, endurance and healthy functioning are what schools must promote. Biologic science should be studied for this purpose through every year of the normal course, whether two, three or four years. Emphasis should be on processes rather than on anatomy. Study of school hygiene must have it as a background to be effective. Normal school-room practices and care of buildings must be models of hygienic observance as part of the preparation of the teacher. Physical health profoundly affects moral health.

Dr. Llewellys F. Barker, Baltimore: The healthiest mode of approach to questions related to sex is through a study of plant and animal life. The two great factors of life, heredity and environment; can be brought before students in a wholly unobjectionable way, and the analogy of human life is so obvious that the principles learned will almost surely be transferred in due time by the learner to the human domain. Observation and experiment, even if limited to a few fundamental points, will be far more fruitful than didactic lectures. Let the teachers-to-be observe for themselves the influence of external conditions in causing changes in the structure of plants and animals, let them note the responses of living substances to heat, light, oxygen, food substances, poisons and infectious agents, and they will quickly realize the importance of a well-regulated environment for the welfare of human life. Again, let them study pollen and ovule microscopically, observe the process of plant fertilization, and the development of the plant embryo, or permit them to watch frogs' eggs, fish eggs, hen's eggs, and to follow the embryos through their various stages and you have chosen the easiest way to initiate them normally into a knowledge of the mysteries of sex, of impregnation and conception, of birth and development. Experimental hybridizing in sweet peas or in colonies of mice quickly opens the mind to the significance of heredity, and surely nothing is more likely to awaken conscience to the duty and privilege of the human race, of improving the quality of the children born than some acquaintance with the laws of heredity, and especially with the rules of Mendel regarding the inheritance of particular qualities.

If the teachers of our schools knew that drunkards, lunatics, idiots, prostitutes, and habitual criminals are such because in the majority of instances they have been born with defective nervous systems; and if they knew that such drunkards, lunatics, idiots, prostitutes, and habitual criminals are more likely to breed their kind than to have healthy offspring, we should have taken a large step forward in that education of public opinion, which will be necessary before we can pass laws which will prohibit parenthood to the notoriously unfit. If the same teachers knew that a family record of "good stock" on the husband's side and on the wife's side is the best guarantee for the birth of physically, mentally and morally healthy children, they could do much toward the development of that sane opinion about marriage which those who have the good of the people at heart hope may soon displace the abnormal ideas now prevalent, not only among young people, but among their parents, who should know and teach their children better.

DISCUSSION

Dr. Helen C. Putnam, Providence: I must take issue with Dr. Barker on one important point. He emphasized the need of teaching women teachers and I think that most educational efforts teach women more than boys and men; I think the balance should be even. In the public schools we must make a special effort to have the boys receive something comparable to what the girls receive in their domestic science work, in order that the boys may become good home makers also.

State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, January 10. Chairman, Dr. W. H. Sanders, Montgomery.

Arizona: Phoenix, January 3-4. Sec., Dr. Ancil Martin.

Colorado: Denver, January 3. Sec., Dr. S. D. Van Meter, 1723 Tremont Place, Denver.

District of Columbia: The District Bldg., Washington, January 10. Sec., Dr. George C. Ober, 125 B St., S.-E.

Illinois: Coliseum Annex, Chicago, January 11-13. Sec., Dr. J. A. Egan, Springfield.

Indiana: 120 State House, Indianapolis, January 10-12. Sec., Dr. W. T. Gott.

Minnesota: State University, Minneapolis, January 3. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

New Hampshire: State House, Concord, January 3-4. Regent, Mr. Henry C. Morrison.

New Mexico: Santa Fé, January 9-10. Sec., Dr. J. A. Massie.

New York: New York City, Albany, Syracuse and Buffalo, January 31 to February 3. Chief of Examinations Division, Mr. Charles F. Wheelock, Albany.

North Dakota: Grand Forks, January 3-5. Sec., Dr. H. M. Wheeler.

Oklahoma: McAlester, January 3. Sec., Dr. Frank P. Davis, Enid.

Oregon: Portland, January 3. Sec., Dr. E. B. McDaniel, Electric Building.

Rhode Island: State House, Providence, January 5. Sec., Dr. Gardner T. Swarts.

South Dakota: Aberdeen, January 11-12. Sec., Dr. F. W. Freyberg, Mitchell.

Vermont: Montpelier, January 10-12. Sec., Dr. W. Scott Nay, Underhill.

Washington: Spokane, January 3. Sec., Dr. F. P. Witter, 207 Traders' Block.

Wisconsin: Milwaukee, January 10-12. Sec., Dr. John M. Beffel, 3200 Clybourn St.

South Carolina June Report

Dr. A. Earle Boozer, Secretary of the State Board of Medical Examiners, reports the written examination held at Columbia, June 14-16, 1910. The number of subjects examined in was 18; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 105, of whom 61 passed and 44 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons	(1910)	79, 79, 82, 83
Medical College of Georgia	(1910)	75, 76, 77, 78
Atlanta School of Medicine	(1908) 76; (1910)	76, 83
Atlanta Medical College	(1898)	83
Tulane University of Louisiana	(1910)	78, 85
University of Louisville	(1909)	75
Johns Hopkins University Medical Department	(1910)	85
Baltimore Medical College	(1907) 75; (1910)	81
Woman's Medical College of Baltimore	(1910)	77
University of Maryland	(1910)	78
Harvard Medical School	(1878)	75
Long Island College Hospital	(1905)	86
Jefferson Medical College	(1910)	81
Medical College of the State of South Carolina	(1907) 78; (1909) 75, 75, 75, 76, 79, 79, 80, 83; (1910)	75, 75, 75, 76, 76, 76, 78, 79, 79, 80, 80, 81, 81, 82, 82, 83, 83, 84, 85, 85, 85, 85, 85, 85, 86.
Vanderbilt University	(1910)	84
University of Nashville	(1910)	86
University of the South	(1908)	81
Medical College of Virginia	(1910)	84

FAILED

College	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1907) 72; (1909)	70
George Washington University	(1908)	70
Atlanta College of Physicians and Surgeons	(1908)	73
Atlanta School of Medicine	(1910)	67
University of Georgia	(1908) 64, 69; (1910)	70
University of Louisville	(1908) 63, 72; (1909)	70
Maryland Medical College	(1904) 58; (1905)	45
College of Physicians and Surgeons, Baltimore	(1910)	59
University of Maryland	(1909)* (1910)	71
Leonard School of Medicine	(1901) 69; (1906) 65; (1908) 72; (1909) 70 (1910)	60
North Carolina Medical College	(1908) 67; (1910)	71
Medical College of the State of South Carolina	(1901)* (1908) 50, 67; (1909)* (1910)	65, 66, 67, 68, 69, 71, 72, 72, 73.
Chattanooga Medical College	(1907)	58
Meharry Medical College	(1909) 60; (1910)	62
Vanderbilt University	(1908) 69; (1910)	71
University of West Tennessee	(1910)	64
University of the South	(1906)*	
Gate City Medical College	(1909)	53

* Grade not given.

Iowa September Report

Dr. Guilford H. Sumner, Secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 12-14, 1910. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 14, of whom 11 passed and 3 failed. Sixteen condidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1909)	80
Northwestern University Medical School	(1910)	84
Illinois Medical College	(1907)	80
Hahnemann Medical College and Hospital, Chicago	(1905)	79
Rush Medical College	(1910)	90
State University of Iowa, College of Medicine	(1910)	93
University Medical College, Kansas City	(1910)	77, 85
Cornell University Medical College	(1908)	90
Jefferson Medical College	(1910)	89
University of Pennsylvania	(1910)	91

FAILED

College	Year Grad.	Per Cent.
Keokuk Medical College	(1898)	68.1
State University of Iowa, College of Medicine	(1906)	†74.2
Ensworth Medical College	(1910)	*73.6

LICENSED THROUGH RECIPROCITY

College.	Year Grad.	Reciprocity with
American College of Medicine and Surgery	(1906)	Illinois
Northwestern University Medical School	(1907) (2, 1909) (2, 1910)	Illinois
Rush Medical College	(1908)	Illinois
Hahnemann Med. College and Hospital, Chicago	(1905)	Illinois
College of Physicians and Surgeons, Chicago	(1910)	Illinois
Keokuk Medical College	(1894)	Wisconsin
Ensworth Medical College	(1904)	Kansas
St. Louis University	(1910)	Illinois
University of Nebraska	(1908)	Nebraska
Creighton Medical College	(1907)	Nebraska
Bellevue Hospital Medical College	(1868)	Minnesota
Medical College of Ohio	(1909)	Ohio

* Second examination.

† Sixth examination.

Mississippi October Report

Dr. S. H. McLean, Secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 11-12, 1910. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass 75. The total number of candidates examined was 70, of whom 26 passed, including 8 non-graduates and 1 osteopath, and 44 failed, including 18 nongraduates. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined.
Kentucky School of Medicine	(1892)	1
Tulane University of Louisiana	(1910)	2
College of Physicians and Surgeons, Baltimore	(1910)	1
Mississippi Medical College	(1909) (2, 1910)	3
Jefferson Medical College	(1910)	1
College of Physicians and Surgeons, Memphis	(1910)	1
Memphis Hospital Medical College	(1910)	4
Vanderbilt University	(1909)	1
University of Nashville	(1902) (1909) (1910)	3

FAILED

College	Year Grad.	Total No. Examined.
Howard University, Washington, D. C.	(1910)	1
Atlanta School of Medicine	(1910)	1
Louisville National Medical College	(1910)	2
Louisville Medical College	(1904)	1
University of Louisville	(1910)	1
Mississippi Medical College	(1907) (1909) (4, 1910)	6
Memphis Hospital Medical College	(1891) (1894) (1906) (1908) (1909) (4, 1910)	9
Meharry Medical College	(1907)	1
University of Nashville	(1898)	1
University of the South	(1900) (1909)	2
College of Physicians and Surgeons, Memphis	(1908)	1

Arkansas Homeopathic November Report

Dr. P. C. Williams, Secretary of the Homeopathic Board of Arkansas, reports the written examination held at Little Rock, Nov. 8, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 2, both of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Kansas City Hahnemann Medical College	(1909)	80.7
Cleveland Homeopathic Medical College	(1903)	83.3

Book Notices

A Text-Book of Physiology. By Isaac Ott, M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Third Edition. Price, $3.50 net. Cloth. Pp. 891, with 393 illustrations. Philadelphia: F. A. Davis Co., 1909.

The order in which the author has arranged the subject matter in this book is commendable. The first chapter is devoted to a full discussion of the structure and function of the cell, including its various metabolic changes, and reproduction. The succeeding chapters take up in order the chemical constituents of the body, food, digestion, absorption, blood, circulation, respiration, secretion, metabolism, animal heat, muscles, the nervous system, special senses, and reproduction. From a pedagogic standpoint the above order is most desirable, each chapter laying the foundation for the succeeding one.

Such tables as that at the end of the chapter on digestion are of pedagogic value. It is entitled "Résumé of Action of the Digestive and Liver Ferments."

The practitioner of medicine will be especially interested in the subchapter on blood devoted to "Medicolegal Tests;" also the subchapter on "Immunity" discussed from a standpoint of the physicians and giving the latest data on zymoids, antitoxins, agglutinins, precipitins, cytotoxins and opsonins.

The subchapter on internal secretions is unusually full and valuable. The author fails to mention, however, the important work of Brown-Séquard, Poehl, Zoth, Morris, Glass, Loewy and Richter showing conclusively that there is an internal secretion produced by the testes and ovaries, as well as by the thyroid, suprarenals and pituitary. The chapter on metabolism is well arranged; the author has caught the spirit of the modern notions on animal nutrition. The subchapter on animal heat is especially good. The chapters on the central nervous system, the special senses, and reproduction are well presented to give the student to get a good working knowledge of these subjects; but do not present striking characteristics.

Confidences. Talks With a Young Girl Concerning Herself. By Edith B. Lowry, M.D. Cloth. Price, 50 cents. Pp. 94. Chicago: Forbes & Co., 1910.

Beginning with the blossoming of flowers from the seed, in this book the child's mind is led to the birds, their eggs and nests, and then to the human organs and processes, for the explanation of the elementary facts about the girl's sexual life. The language is inconsistent at times; that is, part of the book is almost in "baby-talk," while other parts are scientific and contain rather long words. This is no material disadvantage, however, as the chapters are in the form of heart-to-heart talks and can be adapted by the parent to the age of the child.

The plan of the book is good in that the account of sexual matters is interwoven with the explanation of objects of nature in which the child is interested and also with hints about general hygiene. This excellent plan will guard against the possibility of the sexual facts assuming too much prominence. The wise parent can add to the general remarks, using this book for a frame-work and not telling the whole story at one time.

Part of the book is most elementary; that is, it aims at being the very first information the little girl may receive; other parts need not be presented until just before puberty, perhaps. There is no attempt at details of anatomy. The only criticism we have on the book is the absence of explanation of the male in the animal world and in the human family, although a foundation has been laid for it in the description of the work of the pollen in flowers. It is true that the male can be ignored for a time, but it will not be long before the girl will ask—of the parent if there is the proper family confidence, or else of a companion—why boys are different from girls. Then the parent would gladly turn to this book again if it offered help on this question, which may be harder to answer wisely than those which have come before. In addition, we feel that social conditions are such that a girl is not adequately safeguarded unless she understands not only herself but the male. We recommend the book.

A System of Medicine. By Many Writers. Edited by Sir Clifford Allbutt, M.D., Regius Professor of Physic in the University of Cambridge, and Humphry D. Rolleston, M.D., Senior Physician, St. George's Hospital. Vol. VII. Diseases of the Muscles, the Trophoneuroses, Diseases of the Nerves, Vertebral Column, and Spinal Cord. Cloth. Price, $6 net. Pp. 900, with 98 illustrations. New York: Macmillan Co., 1910.

In this volume are discussed the diseases of muscles, including amyotonia congenita, myasthenia gravis, family periodic paralysis and the neuritic type of progressive muscular atrophy, the trophoneuroses, diseases of the nervous system, nerves, spinal cord and meninges. The advances made in neurology during the past ten years are reflected in the section on diseases of the nervous system. The introduction to neuropathology by Mott and the article on medical ophthalmology by Gowers are new. Diseases of the cauda equina and of the sympathetic nervous system are also included here. Herpes zoster is classed as a nervous affection. Many changes and additions have been made in the articles on myelitis, paraplegia, caisson disease, Landry's paralysis, ataxia and syphilis. Chronic anterior poliomyelitis and amyotrophic lateral sclerosis are described under the caption, "Motor Neuron Disease." The neurologist will be pleased with the presentation of his special subject, because everything new up to the time of publication receives a full measure of attention. The typographic and mechanical part of the book is in keeping with that of previous volumes.

A Text-Book of Bacteriology. A Practical Treatise for Students and Practitioners of Medicine. By Philip H. Hiss, Jr., M.D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, and Hans Zinsser, M.D., Associate Professor in Charge of Bacteriology, Leland Stanford, Jr., University, Palo Alto, Cal. Cloth. Price, $3.75. Pp. 745, with 156 illustrations. New York: D. Appleton & Co., 1910.

This book might well have the title "Medical Bacteriology," inasmuch as the subject is discussed from the medical standpoint—the actual relation of bacteriology to medicine. Only one section of about fifty pages is devoted to the bacteria in air, soil, water, and milk—non-pathogenic organisms. The remaining 660 pages are devoted to the pathogenic germs, their morphology, biology, and methods of study. Thirty pages are devoted to diseases of unknown etiology, such as rabies, small-pox, acute anterior poliomyelitis, measles, scarlet fever, yellow fever, and foot and mouth diseases which are probably of bacterial origin, but in which the germ is as yet ultramicroscopic. The book is adapted more to advanced courses in bacteriology than to introductory courses. The language used is highly technical and the discourse exceedingly technical. The student of medicine who has been properly prepared to carry on the study as outlined in the book will profit from it—but the unprepared and especially the practitioner who wishes to review the subject will find it rather difficult to use the book as a text. Nevertheless it should be recommended for what it is—an excellent medical bacteriology.

Walsh's Physicians' Combined Call-Book and Tablet. Flexible Leather, with Flap and Pocket. Price, $1.50. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

Walsh's Physicians' Handy Ledger. A Companion to Walsh's Physicians' Combined Call-Book and Tablet. Half Leather. Price, $3.50. Pp. 600. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

The Walsh system of medical bookkeeping employs a pocket call-book in the usual form used by physicians, which contains, in addition to the pages for entries, an obstetric record and cash account; an obstetric table; table of eruptive fevers; table of changes in the Pharmacopeia; dose table; table of metric equivalents: and a table of poisons and antidotes. To be used in connection with this is a ledger, each page of which, in addition to the space for the name and residence of the debtor, is arranged so that the transactions for each month are shown on a single line, the particular service being indicated under the date by a character. It also contains space for dates and amounts of payments. The books make a condensed but comprehensive system of bookkeeping for the physician, which can be commenced any month of the year.

History of the Medical Society of the District of Columbia. 1817-1909. Cloth. Price, $3. Pp. 499, with illustrations. Washington: Medical Society of District of Columbia, 1909.

This book has been prepared by a committee of the society from presidential addresses, volumes of transactions, manuscript and printed records of the society, as well as from current medical periodicals. A large number of photographs contributed by members appear throughout the book, as well as pictures of the various meeting places of the society, and other Washington buildings of historic and medical interest. Two hundred pages are devoted to a history of the society from its organization in 1817 to the present time. The rest of the book is devoted to a list of members arranged in the order of election, with a short biographical sketch of each. An appendix contains the original constitution and by-laws, together with all additions and changes, and the membership of various committees. A copious index of both persons and subjects makes the material in the volume accessible for ready reference. The book is of value not only to members of the Medical Society of the District of Columbia, but also to all interested in medical history. The society is to be congratulated on the volume which its committee has produced.

Medicolegal

Construction of Washington Medical Practice Act as to Persons Entitled to Licenses by Prior Practice—Titles to be Used—Exempting Former Illegal Practitioners—"Practice"

The Supreme Court of Washington affirms, in re Christensen and others (109 Pac. R. 1040), judgments reversing decisions of the Board of Medical Examiners and directing a license to be issued to each of the applicants, who had been for more than two years prior to March 18, 1909, the date of the approval of the law, a resident of the state, and had for the same period been in continuous practice, in one locality in the state, of his or her respective mode of treatment.

This law, the court says, purports to cover the entire subject matter of licensing practitioners of medicine and other modes of treating the sick or afflicted. It does not purport to amend any prior existing law, and expressly repeals all laws in anywise conflicting with its provisions. In section 4 it provides: "Any person who treats the sick or afflicted may register his or her diploma with the board of medical examiners, and receive a license to practice his or her respective mode of treatment, by paying a fee of $10, * * * Provided, that he or she show evidence satisfactory to said board that he or she had been legally engaged in such practice prior to the passage of this act, in the state of Washington, and is a graduate of a legally incorporated school or college * * * ; or by having been in continuous practice in one locality in this state for the past two years. * * * " Section 6, which refers to those licensed on examination, requires the applicant to file "satisfactory testimonials of good moral character, and a diploma * * * ." Section 20: "All persons receiving a certificate or license under this act shall use no deception in the use of titles of his or her mode of treating the sick, but shall use only such titles as are designated by his or her diploma; or those not having a diploma shall use only such title as he or she holds license to practice. * * * "

It was contended in behalf of the Board of Medical Examiners that an applicant must, in addition to showing two years' practice in one locality, have a diploma and register the same with the board before he would be entitled to a license under the provisions of the last clause above quoted from section 4. It must be conceded that the provisions of this law are somewhat involved, and that the question of its meaning is not free from doubt. However, the court is of the opinion that one who has been in continuous practice in one locality in the state of Washington for two years prior to the enactment of this law is not required to furnish further evidence of his qualifications by a diploma, and that such a person would be entitled to a license regardless of the fact of his ever having a diploma.

By section 20 it clearly appears that the legislature had in mind that at least some of those entitled to a license under this law should not be required to show their qualifications by diplomas. It was contended that the words "those not having a diploma" referred only to a licensee under section 6 on examination, who is required to produce a diploma from a medical school of a certain standing "or satisfactory evidence of having possessed such diploma." But the court cannot agree with that contention. It seems to the court that if a person ever had such a diploma, and is basing his right to a license on it, as he must under section 6, he will be governed in using his title as a practitioner by that which is designated in such diploma, whether he has physical possession of such diploma at that time or not. In other words, if he has or ever had a diploma, and is granted a license on it, then its designation of his title will govern, whether it has any present physical existence or not. He is not one of those mentioned in section 20 as "not having a diploma." The only licensees mentioned in this law that these words could possibly refer to are those who are entitled to licenses by virtue of practice in one locality in the state for two years as provided in section 4. It is quite common, in laws regulating professions and vocations and prescribing qualifications to be possessed by those entering on them, to exempt those already engaged in them from showing any qualifications other than the fact that such persons are already so engaged, or have been so engaged for a certain time. This seems to have been the policy pursued by the Washington territorial and state legislatures. And it has been held that such a provision is not such a discrimination as violates any constitutional right of those seeking to enter such professions or vocations.

It appeared that some of the applicants here were engaged in the practice of medicine and surgery for the two years prior to the passage of this law without having a license required by the law as then existing. This, it was contended, excluded such a person from the right to a license, because he was not legally engaged in practice and therefore was not engaged in practice at all within the meaning of the two years' practice clause of section 4. But it has been noticed that the law here involved is a new and independent act complete in itself, and repeals all former laws on the subject. That part of section 4 following the word "provided" refers to two classes who may receive licenses. The first are persons who have been "legally engaged in such practice prior to the passage of this act." The second are those persons who have been in "continuous practice" in one locality for two years. It may be difficult to see a reason for the legislature exempting one class from the effect of their unlawful acts, and not the other; but the use of the word "legally" in referring to one class, and omitting it in referring to the other, clearly indicates the legislative intent to give the license privilege to the second class, even though they have violated a previously existing license law. The offense was in any event purely statutory, merely a misdemeanor, did not involve moral turpitude, and there is nothing so extraordinary in granting the license privilege by the legislature to those engaged in practice for two years, even though such persons did thereby violate the then existing license law, as to suggest that the court should attribute to the word "practice," as here used without qualification, any other than its ordinary meaning.

In re Harold (109 Pac. R. 1043), decided at the same time that the foregoing decision was rendered, it appeared that the applicant became a resident of the state of Washington, January 1, 1909, having been prior thereto a resident of the state of Indiana and engaged in the practice of medicine and surgery therein. Since then, and until after the enactment of this law, he was engaged in the practice of medicine and surgery in the state of Washington without having a license so to do as provided by the then existing law. In addition to showing such practice in the state of Washington he presented his diploma and evidence showing graduation from a school having the curriculum specified in section 4 of the law.

It was contended in his behalf that, by his showing of graduation from a school having the required curriculum of study and his practice in the state of Washington prior to the enactment of the law, he had thereby complied with all of its requirements, relating to a certain class, entitling him to a license; while it was contended in behalf of the Board of Medical Examiners that since he was not legally engaged in the practice in the state of Washington prior to the enactment of the law he was not entitled to a license, except he prove his qualifications as required by other provisions of the law. Here the court holds that the board was right.

It is manifest, the court says, that at the time this applicant was engaged in the practice of medicine and surgery in the state of Washington from January 1, 1909, until the time of the enactment of this law without having a license so to do, he was violating the plain provisions of the then existing law regulating the licensing of physicians and surgeons. This being true, it needed no argument to demonstrate that he was not "legally engaged in such practice prior to the passage of this act." The court finds nothing in the law warranting its giving to the word "legally" any other than its ordinary meaning. In the decision in re Christensen and others the court recognized that the legislature acted advisedly in using the word "legally" in this clause and omitting it from the two-years' practice clause. The court concludes that within the meaning of the law this applicant was not engaged in such practice prior to the enactment of the law as would aid him in procuring a license thereunder.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

December 3

1 "606," or Dioxydiamidoarsenobenzol (Salvarsan). E. G. Ballenger, Atlanta, Ga.
2 Hospital Day Address. C. W. Burr, Philadelphia.
3 Differential Diagnosis of Typhoid. P. H. Markley, Camden, N. J.
4 Present Status of the Psychoneuroses and of Psychotherapy. E. E. Mayer, Pittsburg.
5 *Acute Primary Polymyositis. C. F. Clowe, Schenectady, N. Y.
6 Vaccine Therapy in Acute Infections. E. Martin, Kings Park, N. Y.
7 Surgical Treatment of Non-Malignant Ovaries. R. F. Ward, New York.
8 Pelvic Peritonitis Complicated by Postoperative Hysteria. J. D. Whitall, Philadelphia.
9 Hepatic Syphilis. M. Goldsmith, Pittsburg.

5. **Acute Primary Polymyositis.**—The occurrence of a primary polymyositis or an inflammation of the muscular tissue in general, says Clowe, has been disputed by many observers. By a certain number also the condition has been held to be always a local one. Recently, however, a number of cases have been placed on record, and the clinical picture is so definite a one that there seems to be no room for doubt that the disease may be accepted as a clinical entity. The picture is a clear cut one. A woman, aged 28, family and personal history unimportant, quite of her usual strength, complained of constant pain and weakness in her arms and shoulders. There was a pronounced wrist-drop. By Thanksgiving her trouble had increased and she showed signs of considerable trouble in her legs. After a careful examination made at this time the diagnosis was made. By December 10 the patient could not walk and had marked pain and soreness in all the muscles of the legs and arms. Those most affected were the biceps, flexors of the hand and wrist, the calf muscles and the thigh. The muscles were hard and of a peculiar rubbery feeling. There was at this time no rise in temperature; electric reactions and normal reflexes were present but weak. Appetite was good, bowels were regular but moved with difficulty on account of weakness, needing to be assisted by an enema. Patient slept well but was much annoyed by not being able to turn herself in bed or adjust the bedding. Also was much tired by the effort of holding up her head and trunk.

During January and February the patient improved gradually. Strength returned slowly but contracture became marked. If the hand was extended on the wrist the fingers were greatly flexed and if the fingers were extended the wrist was flexed. The same condition prevailed in the legs. She could only walk by wearing very high heeled shoes. If her shoes were removed, on standing she could not get her heels on the floor. Examination at various times showed a normal blood-count; no eosinophilia; no bacteriemia at any time; urine normal. During the stage of great weakness she suffered from hyperidrosis. In March and April improvement was more marked; contractions were much lessened. She could walk and use her hands fairly well to sew and feed herself; could comb her hair. There was still more weakness of the extensors than of the flexors; some of the muscles were markedly atrophied. The patient had gained about 10 pounds in weight.

Medical Record, New York

December 10

10 Electric Sleep and Analgesia. L. G. Rabinovitch, New York.
11 Treatment of Facial Neuralgia by Alcohol Injections. O. Kiliani, New York.
12 Importance in Scarlatina of an Early Bacterial Examination of the Secretion from the Postnasal Region. E. C. Schultze, New York.
13 Fractures of the Skull. A. M. Pond, Dubuque, Iowa.
14 Phenol Injections in Hemorrhoids and Goiter. H. Schiemann, New York.
15 Analysis of Over Thirty-Two Thousand Cases of Scarlet Fever. A. K. Sallom, Philadelphia.

Boston Medical and Surgical Journal

December 8

16 What Medical Societies Can Do for the Health of the People. J. Ritchie, Jr., Boston.
17 *Transmission of Bacteria by Flies with Special Relation to an Epidemic of Bacillary Dysentery. S. T. Orton and W. L. Dodd, Boston.
18 *Brown Séquard's Epilepsy in the Guinea-Pig. A. E. Taft, Palmer, Mass.

17. **Transmission of Bacteria by Flies.**—An organism conforming to the Shiga type of *B. dysenteriæ* was recovered from ten out of fifteen cases examined by Orton and Dodd.

B. prodigiosus planted in the laundry was recovered from flies caught in traps in the scullery and five screened ward dining rooms at an interval of from two to six days after the original plant.

It proves impracticable in most insane hospitals to keep the flies from access to fecal matter and from food when they are present outside in large numbers and, therefore, the best prophylaxis against fly-borne epidemics is in cleaning up the breeding places of the fly to reduce its numbers or eradicate it.

The typhoid fly—*Musca domestica*—breeds in tremendous numbers in decaying vegetable waste of varying sorts, and a search for maggot-infested places with subsequent attention thereto offers the best line of attack.

The house fly's egg to adult cycle is ten days, so that vegetable waste should be cared for at least once a week during fly season.

Horse manure may be treated by chemical means, but it is probable that, if it is kept dry and in the dark, but little breeding will take place. Mixing with many times its bulk of cow manure may prove effective. The authors urge that when possible, all waste material should be ploughed into the land without accumulating. Spreading over the land will probably suffice to reduce the pest markedly.

In hospitals surrounded by considerable ground it is probable that the great majority of flies are home grown, and the extermination of their breeding places is an object which cannot be overlooked.

18. **Epilepsy in the Guinea Pig.**—The work of this report was undertaken by Taft to observe more particularly the transmission from parent to offspring of the "epileptic" and associated conditions. It has been continued during a period of eighteen months, and is based on observations made on 195 animals. Of this number, 68 were subjected to a lesion of the sciatic nerve. The remainder were the normal animals used, and the succeeding generations.

Taft found that lesions occurring in the cord or principal nerve trunks of guinea pigs produce a tendency to convulsions resembling epilepsy in the human subject. The attacks, however, have not been proved spontaneous, but may be elicited by irritation of a specific zone of skin on the side of the face and neck corresponding to the injured nerve. In this series 97 per cent. of the animals in which the sciatic nerve was resected developed convulsions; the remainder, 3 per cent., showed only the scratch reflex. The scratch reflex, the first manifestation of the nervous lesion, developed at the end of a period averaging eighteen days after the division of the nerve. The complete convulsion appeared on an average of one month and nine days following the injury to the nerve and eighteen days after the development of the scratch reflex. Age proved not to be an absolute factor in relation to the time of development of the convulsions.

The zone of irritation varies in extent. The sensitive area is at first limited to the skin over the side of the face. This extends progressively with the further development of the convulsive tendency to include the shoulder and often some distance beyond the border of the scapula. The degree of sensitiveness varies in individual cases. Sometimes merely touching the hair will produce an attack, while in others definite moulding of the skin is required. Trophic changes occur in the zone of irritation, manifested often by falling of the hair, leaving the skin exposed; or it may be the hair becomes brittle and breaks off, thus causing a roughening of the coat. In extreme cases the skin may ulcerate. As a rule, parasites accumulate over the area and there is some anesthesia. The convulsion follows irritation of the sensitive zone and is preceded by the scratch reflex. Following this, the animal falls on its back with eyes closed, insensible, and all its muscles in a state of tonic, followed by clonic, convulsion. The attack is usually brief, but may be spontaneously repeated several times. For some time following the return of consciousness the animal is somewhat stupid and dazed. It was found that the animals would in most cases respond to repeated irritation, though some could be made to react only once without an interval of some hours to a day or more. Severity of attacks depended on the size and physical condition mainly, though no rule could be applied to all cases. Those developing the attack most quickly were subject to the most severe convulsions. The effect of convulsions was productive of a marked loss of flesh, and this bore no relation to the quantity or quality of food given. Lessened reproduction was also universal, and in almost every instance of birth of young they were not alive or died immediately after birth. This was proved not to be due directly to the division of the nerve, for by limiting attacks to not more than one each week, perfectly normal offsprings were born. This would seem to show a marked disturbance in metabolism due to frequent convulsions. The study of 128 offspring of epileptic animals to observe the transmission of epilepsy, reported by Brown-Séquard to have been seen in his series, was absolutely negative. Four young were very weak at birth and died on the second day, but showed no other symptoms. The fact that convulsions in the offspring of epileptic animals always, in Brown-Séquard's experience, existed with a lack of toes, makes it seem possible that there may have been some prenatal injury which would produce the same effect as a division of the nerve. The thirteen young of the second and third generations were also negative.

Virginia Medical Semi-Monthly, Richmond

November 25

19 Diseases a Municipality Can Control and How to Do It. R. K. Flannagan, Richmond.
20 Autotoxemia. R. C. M. Lewis, Marion, Ohio.
21 Symptoms and Treatment of Uncinariasis. J. R. Perkins, Spencer.
22 Early Instruction of Academic Students of Both Sexes as to the Dangers of Alcoholism and Its Associated Evils. V. W. Harrison, Richmond.
23 Probable Hydrophobia. E. W. Brown, Washington.
24 Diphtheria-Membranous Croup. L. Lofton, Emporia.
25 Arteriosclerosis; Diagnosis and Treatment. J. C. Walton, Richmond.

Lancet-Clinic, Cincinnati

December 3

26 Money in Its Relation to Surgery and Medicine. C. S. Bond, Richmond, Ind.
27 Typhoid. D. E. Barnett, Homer, Ind.
28 An Unusual Case. W. H. Ketchum, Hopkinsville, Ky.
29 The General Practitioner and the Specialist. G. Pigman, Liberty, Ind.

Journal of Cutaneous Diseases, New York

October

30 Technic of an Efficient Procedure for the Removal and Cure of Superficial Malignant Growths, S. Sherwell, Brooklyn, N. Y.
31 Multiple Neurofibromata. D. Friedlander, San Francisco.
32 Mycosis Fungoides. B. Roman, New York

Bulletin of the Manila Medical Society

October

33 Occurrence of the Double-Pored Tapeworm in Man. D. G. Willets, Manila.
34 *Production of Immune Bodies without Reaction After Inoculation with Cattle-Plague Blood. E. H. Ruediger, Manila.
35 Gangosa in Guam. J. Garrison, U. S. Navy.
36 *Case of Recurring Abscesses of the Liver. R. Brooks, U. S. Army.
37 Rabies. E. R. Whitmore, Manila.

34. **Production of Immune Bodies.**—According to the results obtained by others and those reported by Ruediger, it seems that animals that do not react after inoculation with cattle-plague blood may produce serum which in immunizing value is equal to, or nearly equal to, serum obtained from animals in which inoculation with cattle plague blood is followed by a good reaction.

36. **Recurring Abscesses of the Liver.**—In March, 1906, an abscess of the liver developed in Brooks' case, which ruptured into the pleural cavity. This was drained through an incision made by resecting a portion of the sixth rib in the right axilla. According to the patient's statement, the pus was of a red color and of a viscid consistency. At the end of three months he was returned to duty and remained well for some time. In October, 1909, the patient was admitted to the hospital again with fever, hepatic tenderness and enlargement of the liver. A diagnosis of liver abscess was made and the pus drained by resecting a portion of the seventh rib in the posterior axillary line. A large quantity of reddish glutinous pus was evacuated, which was not examined microscopically. After a tardy but uneventful recovery he was returned to duty in March, 1910. August, 1910, he was admitted to the hospital with a temperature of 100 F. and a swelling about the size of a lemon in the epigastric region, which moved up and down during respiration. Liver abscess was again recognized and the pus liberated through a median incision. At the time of the operation the liver was adherent to the parietal peritoneum and an abscess of the left lobe was found. The pus presented the same qualities as on the former occasions. On microscopic examination no amebas were found and no growths were obtained on the ordinary culture media. The recurring abscesses in this case are explained by Brooks by assuming that man may become a dysentery carrier for a number of years without any clinical manifestations of intestinal disease, or what appears to be more rational, by assuming that the parasites are capable of remaining latent in one or more hidden foci of infection, and from time to time resuming a pathogenic action.

Detroit Medical Journal

November

38 Salvarsan (Dioxydiamidoarsenobenzol) in Treatment of Syphilis. H. R. Varney and R. C. Jamieson, Detroit.
39 Abortive Treatment of Gonorrhea. W. E. Keane, Detroit.
40 Management and Treatment of Acute Gonorrhea. J. C. Dodds, Detroit.
41 Chronic Urethritis; Diagnosis and Treatment. W. C. Martin, Detroit.

Memphis Medical Monthly

October

42 Recurrences in Malaria. Their Cause and Prevention. W. H. Deaderick, Marianna, Ark.
43 *Prophylaxis and Treatment of the Pernicious Forms of Malaria. H. L. Sutherland, Rosedale, Miss.
44 Uncinariasis. J. H. McNeill, Olive Branch, Miss.
45 Fibroid Tumors of the Uterus. Their Treatment. J. H. Carter, Memphis.
46 Iritis. R. Fagin, Memphis.

43. **Pernicious Malaria.**—As a prophylactic measure against the recurrence of fever, not by a reinfection but because the quinin did not destroy all the parasites, and by rapid multiplication gain sufficient force in a week or ten days to produce a fever, Sutherland pins his faith more on the daily use of quinin than on any other measures, and he thinks 2 grains, three times a day, is sufficient. A prescription which he has used for many years, is:

℞		gm. or c.c.
Quinin sulphate	ʒ 2	8
Aromatic sulphuric acid	℥ 1	30
Tincture chlorid of iron	ʒ 4	16
Water q. s.	℥ 8	240

S. Teaspoonful in water three times a day.

He would not recommend to a person who had not had malaria the daily use of quinin as a prophylactic measure, unless it be to one who was making a visit of a week or two into a malarious section.

Atlanta Journal-Record of Medicine

November

47 When Should an External Urethrotomy be Done? T. M. McIntosh, Thomasville, Ga.
48 Headaches and Neuralgias Due to Diseases of the Nose and Accessory Sinuses. H. M. Lokey, Atlanta, Ga.
49 Chronic Non-Suppurative Middle Ear Diseases. G. H. Cooper, Opelika, Ga.
50 Variations in Appendicitis. F. K. Boland, Atlanta.
51 Vaginal Cesarean Section. R. R. Kime, Atlanta.
52 Anterior Poliomyelitis. T. Toepel, Atlanta.
53 Pulmonary Tuberculosis Treated by Artificial Pneumothorax. M. E. Lapham, Highlands, N. C.

Wisconsin Medical Journal, Milwaukee

November

54 *Serum Treatment of Hemophilia. A. J. Patek, Milwaukee.
55 *Tincture of Iodin as a Skin Antiseptic. M. W. Dvorak, La Crosse.
56 Id. W. H. Brown, Madison.
57 Place and Value of the Splint in Minor Surgery. J. C. Hancock, Dubuque, Iowa.
58 Progress of Surgery During the Middle Ages. T. L. Harrington, Milwaukee.

54 and 55. Abstracted in The Journal, July 23, 1910, pp. 343 and 344.

Montreal Medical Journal

November

59 Tuberculosis of the Kidney. W. Hutchinson, Montreal.
60 Treatment of Tabes Dorsalis. T. A. Williams, Washington, D. C.
61 Sarcoma of the Choroid. G. H. Thompson, North Adams, Mass.
62 Should Eclamptic Mothers Nurse Their New-Born? J. R. Goodall, Montreal.
63 *Strangulated Hernia. E. J. Williams, Sherbrooke, Que.
64 Fatigue: Normal and Abnormal: Its Significance to the Physician. D. M. Brown, Montreal.
65 Uses of the Roentgen Rays in Surgery. W. A. Wilkins, Montreal.

63. **Strangulated Hernia.**—The patient was a male infant, aged 14 months, who had suffered from a left-sided inguinal hernia since birth. Strangulation had been present for thirty-six hours, and after an unsuccessful attempt to reduce it, with the patient under chloroform, Williams decided to operate. On opening up the inguinal canal and the sac, the contents were found to be cecum and appendix, which latter measured 3 inches in length. After the removal of the appendix and replacement of the intestine into the abdominal cavity the congenital sac was obliterated by a continuous catgut suture and an operation for radical cure was performed. The patient made an uneventful recovery, and did not seem to suffer any inconvenience from the operation at any time.

Alabama Medical Journal, Birmingham

November

66 Gonorrhea Treated with Gonococcus Vaccine. C W. Shrop-[illegible]
67 [illegible] H. C. Crelly, Birmingham.
68 [illegible] of Cancer. I. H. Lamb, Washington, D. C.

Washington Medical Annals

November

69 *Case of "Wandering" or Parasitic Fibrocystic Tumor of the Uterus. I. S. Stone, Washington, D. C.

69. **Wandering Tumor of the Uterus.**—In this case a diagnosis of ovarian tumor was made and operation done. After the trocar had evacuated more than a quart of fluid, a growth was discovered, the posterior portion of which was solid or semi-solid; no adhesions or pedicle nor any attachment to either uterus or ovary. Comparatively slight pressure on the flanks caused the sudden expulsion of the tumor. The only place of attachment found was a point near the right parovarium, or between the ovary and fimbriated extremity of the tube. This attachment did not contain large vessels such as are seen in pedicles, and needed neither ligature nor suture; the raw surfaces were closed with fine sutures, as usually done

for the prevention of adhesions The recovery of the patient was prompt and uneventful Stone is of the opinion that this tumor was one of parasitic or migratory character, having its origin within the muscular wall of the uterus Its solid portion was precisely similar to the typical uterine fibromyoma, and its microscopic examination confirmed this observation The tumor had separated from its uterine attachment by torsion of its pedicle and strangulation of its vascular supply, which ultimately resulted in atrophy of the pedicle and its complete absorption.

Journal of Advanced Therapeutics, New York

November

70 Psoriasis H M'Intosh, Boston
71 Electricity as an Aid in the Treatment of So Called Functional Diseases F B Bishop, Washington D C
72 Physical Forces in Tuberculosis C Pope, Louisville, Ky

St. Paul Medical Journal

December

73 *Rationale of Transverse Abdominal Incisions S S Hesselgrave, St Paul
74 Pathology and Treatment of Puerperal Infection J L Rothrock, St Paul
75 Bovine Tuberculosis as a Public Welfare Problem M H Reynolds, St Paul

73 **Transverse Abdominal Incisions**—Hesselgrave claims to get much better results since he began using the transverse incision and since the only important change he has made in the technic is the direction of the incision, he thinks it only fair to ascribe the improvement to the direction of the incision The vertical incision is poorly supplied with arteries and veins to feed the wound and carry away the debris, and when the recti muscles are forcibly retracted for some time the bruising of the wound margin is a factor in wound reaction and the cause of the "soreness" always complained of after an operation done by this method The absence of this complaint and the ability of patients to move themselves about unaided directly after the operation are noticeable features of the transverse incision

The most important advantages of the transverse incision to the operator are 1 Easier and less tiring operating on account of the direct access to the field of operation and the better view of the area involved 2 Simplicity, one does not have to learn a multitude of incisions running every which way It is only necessary to learn the anatomy of the cross section of the abdominal wall above and below the semilunar fold of Douglas and to make an effort to keep the incision within the limits of the semilunar lines 3 One is never embarrassed for want of space, for if more room is needed than originally thought it can be obtained by extending the incision in one direction or the other, or, if need be, in both directions

Some of the most important advantages to the patient are 1 Better looking scar 2 Stronger union of the aponeuroses 3 Less pain This is especially noticeable when the recti muscles are cut, and is due to the absence of spasm of the recti 4 Less wound reaction This is due to the fact that the wound margins are not contused by retractors, and to the technic of closing the skin into which no needle nor thread penetrates 5 Less anesthetic is needed, particularly when the recti muscles are cut, because we have no rigidity to overcome 6 Greater protection is offered the intestines, which are retained within the cavity surrounded by their normal envelope 7 Less gauze packing is necessary and we should never hear of a yard piece being left in the abdomen since they are all within reach of the eye 8 In cases of pendulous abdomen a long lozenge shaped incision will do away with the skin and fat in this deformity as a preliminary to the proposed operation 9 Shaving off the pubic hair is not necessary and everyone who has been subjected to this measure has been grateful for its discontinuance

Yale Medical Journal

November

76 Home Treatment of Neurasthenia M Mailhouse, New Haven Conn
77 Institutional Treatment of Neurasthenia W N Thompson, Hartford Conn
78 Sanatorium Treatment of Neurasthenia F R Hallock, Cromwell, Conn

Journal of the Michigan State Medical Society, Battle Creek

December

79 *Use of Cancer Residue J W Vaughan Detroit
80 *Pelvic Infections B R Schenck, Detroit
81 *Value of Vaginal Incision in Acute Pelvic Infections R Peterson Ann Arbor
82 *Management of Breast Feeding T B Cooley, Detroit
83 Operative Treatment of Convergent Strabismus R Connor, Detroit
84 Coccygodynia Errors in Diagnosis and Treatment A S Youngs, Kalamazoo

79 **Cancer Residue**—The attempt has been made by Vaughan to find proof with regard to the formation of a specific ferment by the injection of the non toxic proteid of the cancer cell, through a study of the various blood elements, particularly the leukocytes, and some interesting findings have been recorded The cases on which he made his observations, all belong to the inoperable group, cases of uterine, ovarian and breast carcinoma From a study of the cases cited, and their blood findings, certain definite conclusions can be drawn Especially is this true since the clinical course of the disease seems to progress either favorably or unfavorably in direct ratio to the changes in percentage of the white blood cells that injections of cancer residue produce Thus, if the percentage of mononuclear cells increases markedly following a residue injection, a more favorable prognosis can be given than if no such reaction is obtained Many cases in which to the examining eye it appears that all cancer cells can be removed, are in reality inoperable cases, and evidence of this truth is only too frequently shown after operative treatment has been applied Such cases, however, are regarded by Vaughan as the ideal ones in which to apply the use of cancer residue, since the number of cancer cells remaining in the host after removal of the tumor is sufficiently small so that their total destruction should be assured

During four and one half years of trial there has not been a known recurrence in cases belonging to this group With inoperable cancer, to which group all cases reported here belong, the amount of cancer tissue may be so large that a too rapid splitting up of the malignant cells may be a menace to the patient Vaughan has had several cases which, after prolonged treatment and large injections, have shown gastrointestinal disturbances such as diarrhea and vomiting, together with rapid pulse rate and slightly subnormal temperature However, since a study of his cases and others shows that large doses do not cause the tumor cells to disappear with the rapidity that small injections do, Vaughan is more prone to attribute these untoward symptoms to the size of the injection Nevertheless, since every proteid contains a toxic group, it can easily be imagined that too rapid destruction of a large amount of cancer tissue would be of danger to the patient For this reason, in many instances, he has removed as much malignant tissue as possible before beginning residue treatment In every case that this has been done, the skin incision has healed by primary union, regardless of whether cancer tissue was macroscopically left or not, consequently Vaughan can see no logical reason why such a procedure should not be adopted

He impresses the following facts 1 The injections should always be small in amount, preferably 5 to 10 minims of a ½ to 1 per cent solution 2 Injections, according to present knowledge, should be controlled by daily differential leukocyte counts 3 Injections should be made only when the percentage of mononuclear cells is on the decrease 4 A good blood reaction, by which is meant an increase of from 10 per cent up of mononuclear cells following residue injection tends toward a favorable prognosis 5 If the blood count does not respond, smaller doses should first be tried, if this fails to produce the desired change, different residues should be used until one is found which brings about this result

80 and 81 Abstracted in The Journal, Nov 5, 1910, p 1675

82 Abstracted in The Journal, Oct 29, 1910, p 1585

Pennsylvania Medical Journal, Athens

November

85 *Fractures of the Shaft of the Femur End Results W L Estes South Bethlehem
86 Barriers to Progress in the Care of the Insane W K Walker Pittsburg
87 State Supervision of the Insane T H Weisenburg, Philadelphia

88 State and County Care of the Indigent Insane. C. W. Burr, Philadelphia.
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85. Abstracted in The Journal, Nov. 12, 1910, p. 1757.

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11 **Treatment of Morphinomania.**—The details of the treatment which Miller recommends are as follows: 1 A course of nine weeks in a nursing home or similar institution. He considers this period as long as desirable and yet short enough to bring the cure within the reach of most patients 2 Examine the patient and make sure there is nothing to contraindicate the treatment 3 Explain to the patient very fully the nature of the cure Let him see that you do not mean to treat him as a criminal, but that you want to help him Explain that you will allow him practically as much morphin as he asks for during the first three days, and that by the end of that time he will be sound asleep, and free of the craving 4 During the first three days of treatment, the patient should get a diminishing number of injections of diminishing strength and on the third day the injections should be per rectum 5 Before each injection he has to take a draught containing 5 grams of sodium bromid The total for the three days should work out at about 100 grams By the end of the third day both bromid and morphin are stopped, and the patient will be in a comatose or semicomatose condition which will last for three to six days more 6 During all this time the patient is roused to take milk at regular intervals, and to be placed on the commode to empty bowel and bladder 7 When the effects of the bromid begin to pass off there will be in all probability a certain amount of mental confusion, including hallucinations, delusions of persecution and so on These will pass off soon 8 As soon as the patient appears to be sufficiently sensible efforts should be made to hypnotize him, and the lethargic state he is in will materially assist Suitable suggestions must be made without waste of time lest the craving should reassert itself before the mind is sufficiently influenced This is the critical point of the whole cure 9 As soon as possible the patients should be brought into one room and hypnotized collectively This Miller considers of very great importance, as would any one who has seen the method practiced abroad All the most successful exponents of treatment by suggestion on the Continent lay great stress on the value of this method —Bertillon, Van Renterghem, the late Dr Wetterstrand, and many others It serves two purposes: (a) to facilitate the hypnotization of obstinate patients, (b) to enhance the effect on all that respond 10 During this period, that is, from the second to the end of the seventh week, the patients should be strictly supervised and no access to drugs allowed Everything is done to make life interesting, and to promote the general health of the patient 11 During the eighth and ninth weeks the patients should be allowed to keep their morphin and syringes The hypnotic sittings should be reduced in number, and should have special reference toward teaching the patient to put himself to sleep, that is, autohypnosis Autohypnosis is, says Miller, a mental knack or trick that can be acquired through hypnotic suggestion by all but a certain percentage of mental invertebrates Once acquired, this power will serve to give the patient in the future a ready refuge from worry or pain, or anything else that might lead to thoughts of morphin

17 **Treatment of Lobar Pneumonia**—The central fact in this paper is the employment of a certain drug combination in twenty cases of lobar pneumonia with no mortality, but with abortion of four of the cases The treatment advocated is the administration from the time of diagnosis of a combination of creosote and potassium iodid Mathison gives, from the time of diagnosis the following prescription, and to minors one of strength proportionate to their age Potassium iodid, 1 dram, creosote, ½ dram, rectified spirit, 2 drams, liquid extract of liquorice 3 drams or 4 drams of the older Pharmacopeia preparation Water to 6 ounces A tablespoonful to be taken every four hours In this combination the antiseptic action of creosote limits the extension of the pneumonic process It directly opposes the invaders, probably by making the circulation an unsuitable haunt for them, and perhaps also by digesting enzymes The iodid stimulating cell action, loosens the exudate The fluxion is diminished by the quieting effect both drugs have on the heart, by their

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11 **Treatment of Morphinomania**—The details of the treatment which Miller recommends are as follows: 1 A course of nine weeks in a nursing home or similar institution. He considers this period as long as desirable and yet short enough to bring the cure within the reach of most patients 2 Examine the patient and make sure there is nothing to contraindicate the treatment 3 Explain to the patient very fully the nature of the cure Let him see that you do not mean to treat him as a criminal but that you want to help him Explain that you will allow him practically as much morphin as he asks for during the first three days, and that by the end of that time he will be sound asleep, and free of the craving 4 During the first three days of treatment, the patient should get a diminishing number of injections of diminishing strength and on the third day the injections should be per rectum 5 Before each injection he has to take a draught containing 5 grams of sodium bromid. The total for the three days should work out at about 100 grams By the end of the third day both bromid and morphin are stopped, and the patient will be in a comatose or semicomatose condition which will last for three to six days more 6 During all this time the patient is roused to take milk at regular intervals, and to be placed on the commode to empty bowel and bladder 7 When the effects of the bromid begin to pass off there will be in all probability a certain amount of mental confusion, including hallucinations delusions of persecution and so on These will pass off soon 8 As soon as the patient appears to be sufficiently sensible, efforts should be made to hypnotize him, and the lethargic state he is in will materially assist Suitable suggestions must be made without waste of time lest the craving should reassert itself before the mind is sufficiently influenced This is the critical point of the whole cure 9 As soon as possible the patients should be brought into one room and hypnotized collectively This Miller considers of very great importance as would any one who has seen the method practiced abroad All the most successful exponents of treatment by suggestion on the Continent lay great stress on the value of this method—Bertillon, Van Renterghem, the late Dr Wetterstrand, and many others It serves two purposes· (a) to facilitate the hynotization of obstinate patients, (b) to enhance the effect on all that respond 10 During this period, that is, from the second to the end of the seventh week, the patients should be strictly supervised, and no access to drugs allowed Everything is done to make life interesting and to promote the general health of the patient 11 During the eighth and ninth weeks the patients should be allowed to keep their morphin and syringes The hypnotic sittings should be reduced in number, and should have special reference toward teaching the patient to put himself to sleep, that is, autohypnosis Autohypnosis is, says Miller, a mental knack or trick that can be acquired through hypnotic suggestion by all but a certain percentage of mental invertebrates Once acquired, this power will serve to give the patient in the future a ready refuge from worry or pain, or anything else that might lead to thoughts of morphin

17 **Treatment of Lobar Pneumonia**—The central fact in this paper is the employment of a certain drug combination in twenty cases of lobar pneumonia, with no mortality, but with abortion of four of the cases The treatment advocated is the administration from the time of diagnosis of a combination of creosote and potassium iodid Mathison gives, from the time of diagnosis, the following prescription, and to minors one of strength proportionate to their age Potassium iodid, 1 dram, creosote, ½ dram, rectified spirit, 2 drams, liquid extract of liquorice, 3 drams, or 4 drams of the older Pharmacopeia preparation Water to 6 ounces A tablespoonful to be taken every four hours In this combination the antiseptic action of creosote limits the extension of the pneumonic process It directly opposes the invaders, probably by making the circulation an unsuitable haunt for them, and perhaps also by digesting enzymes The iodid, stimulating cell action, loosens the exudate The fluxion is diminished by the quieting effect both drugs have on the heart, by their

combined diuretic action, and by the reduction of blood-pressure by the iodid.

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Annales des Maladies des Org. Génito-urinaires, Paris

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Archives de Médecine des Enfants, Paris

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Obstétrique, Paris

October, III, N. S., No. 10, pp. 769-888

40 *Spontaneous Delivery with Rachitic Contracted Pelvis. M. Marioton.

40. **Spontaneous Delivery with Contracted Pelvis.**—Marioton reviews the experiences in this line at the Clinique Tarnier at Paris, in charge of Bar, with 180 cases during the last two years, striving to determine the probabilities for delivery without assistance in the various grades of rachitic contracted pelvis. This anomaly seems to have grown less and less frequent during the last half century, not only at this clinic, but according to the reports from six other maternities of Paris. The maternal mortality was as low for the women with contracted pelvis—when delivery was spontaneously terminated—as for women with normal pelves. The mortality was only 0.6 per cent., while the general obstetric mortality is now estimated at 0.5 per cent. The statistics from various clinics and the management of the cases are tabulated for comparison. The data show that with a minimum conjugate diameter (*diamètre promonto-pubien minimum*, estimated by subtracting 1.5 cm. from the diagonal conjugate), of over 9 cm., delivery is spontaneously completed in 80 per cent. of all cases; below 8 cm. this rarely occurs—not in over 25 per cent. Between these limits of 8 and 9 cm. (3⅜ and 3⅝ inches) is the debatable ground. The dividing line seems to lie between 8.5 and 8.6 up to 8.9 cm. Below 8.5, assistance is generally necessary in more than 50 per cent. of the cases. The statistics cited show that spontaneous delivery occurs 10 to 11 per cent. more frequently in women who have already borne children. With pelves over 8.6 cm., the fetal mortality scarcely surpassed that with normal pelves, being about 9 per cent., while with pelves of less than 8 cm. fully 30 per cent. of the fetuses succumbed. The influence of preceding births did not seem to affect the fetal mortality, but infants weighing not much over 5 pounds died in a proportion ranging from 22.85 to 80 per cent., irrespective of the degree of contraction of the pelvis. With infants weighing from 5 to 6 pounds and a trifle over, the mortality was from 6 to 8 per cent., increasing to 20 per cent. with pelves between 8.1 and 8.5 cm. Under 5 and 6 pounds, with a conjugate diameter of 8 cm., the mortality is a little less than for the heavier children, but it amounted to 33 and 50 per cent. The data presented show that the fact of the contracted pelvis *in itself* does not render the prognosis for the mother any more serious.

Revue de Chirurgie, Paris

November 10, XXX, No. 11, pp. 945-1080

41 The Pain With Echinococcus Disease of the Liver. (Douleur dans les kystes hydatiques.) E. Quénu.
42 *Treatment of Surgical Tuberculosis of Bones and Joints. (Des progrès réalisés dans le traitement chirurgical des tuberculoses ostéoarticulaires.) P. Vignard and R. Armand.

42. **Treatment of Surgical Tuberculosis of Bones and Joints.**—Vignard and Armand conclude their long article, which is accompanied by thirty-one skiagraphs of some of the cases reported, with the statement that the natural tendency toward a cure of tuberculosis, especially in the joints in the young, imposes the necessity for prolonged immobilization as the best treatment in such cases. Local injections may be advisable as an adjuvant, especially in residual abscesses after healing over of the bone lesions. They have no action on the latter, as it is impossible for them to reach all parts of the lesion effectually, and the fluid injected has no effect on bone tissue, but in a synovial or abscess pocket they may do good service. Whenever a focus of tuberculous osteitis is accessible, it should be cleared out, and operative treatment is also indicated for a joint lesion if no turn for the better is apparent after five or ten months of immobilization. The operation should be concluded by plugging the cavity left in bone or joint with Mosetig filling. Everything must be done to avoid the necessity for drainage, at least for any length of time. Treatment on these principles is applicable only in cases in which there is no fistula and the kidneys are sound.

Revue de Médecine, Paris

November, XXX, No. 11, pp. 857-936

43 Experimental Bacillary Arthritis with Effusion. (Contribution à l'étude pathogénique des arthropathies bacillaires.) L. Landouzy, H. Gougerot and H. Salin.
44 *Central Nervous System of Children with Inherited Taints. II. (Le système nerveux central d'enfants issus de parents en état morbide.) G. Catola.

44. **Nervous System with Inherited Taints.**—The conception of an inherited predisposition to disease is sustained by the histologic findings in the central nervous system in eight children examined by Catola. The mothers had had tuberculosis, nephritis, pernicious anemia or syphilis, and the nerve tissue in the children showed imperfect or otherwise abnormal structure. The toxins seem to be able to induce hypoplasia or hyperplasia, affording an anatomic basis for the predisposition to disease in such families.

Semaine Médicale, Paris

November 23, XXX, No. 47, pp. 553-564

45 *Diffuse Calcification of Connective and Subcutaneous Tissue. (La calcinose généralisée et ses formes anatomiques interstitielle et sous-cutanée.) J. Lhermitte.

45. **Diffuse Calcification of Connective and Subcutaneous Tissue.**—Lhermitte calls attention to an anatomic-clinical syndrome characterized by infiltration with lime of the subcutaneous and connective tissue. This generalized calcinosis, as he calls it, is liable to affect both sexes, but is most frequent between the ages of 8 and 20. None of the specific infections seems to have anything to do with it, unless possibly syphilis. Krause and Trappe noticed marked improvement in their case under mercurial treatment, although there were no signs of syphilis and the Wassermann reaction was negative. Mercurial treatment was even more effectual in Stradiotti's case in which there was a history of untreated syphilis in youth; at the age of 44 a profusion of subcutaneous nodules containing lime subsided under mercurial treatment. The data reported seem to indicate further a close connection between this diffuse calcinosis and scleroderma. In a number of the cases on record there was irregular, pronounced enlargement of the thyroid. In many cases local trauma seemed to be responsible for the first development of the subcutaneous form of the affection. The interstitial or muscle-

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October, III, N. S., No. 10, pp. 769-888

40 *Spontaneous Delivery with Rachitic Contracted Pelvis. M. Marioton.

40. **Spontaneous Delivery with Contracted Pelvis.**—Marioton reviews the experiences in this line at the Clinique Tarnier at Paris, in charge of Bar, with 180 cases during the last two years, striving to determine the probabilities for delivery without assistance in the various grades of rachitic contracted pelvis. This anomaly seems to have grown less and less frequent during the last half century, not only at this clinic, but according to the reports from six other maternities of Paris. The maternal mortality was as low for the women with contracted pelvis—when delivery was spontaneously terminated—as for women with normal pelves. The mortality was only 0.6 per cent., while the general obstetric mortality is now estimated at 0.5 per cent. The statistics from various clinics and the management of the cases are tabulated for comparison. The data show that with a minimum conjugate diameter (*diamètre promonto-pubien minimum*, estimated by subtracting 1.5 cm. from the diagonal conjugate), of over 9 cm., delivery is spontaneously completed in 80 per cent. of all cases; below 8 cm. this rarely occurs—not in over 25 per cent. Between these limits of 8 and 9 cm. (3⅜ and 3⅝ inches) is the debatable ground. The dividing line seems to lie between 8.5 and 8.6 up to 8.9 cm. Below 8.5, assistance is generally necessary in more than 50 per cent. of the cases. The statistics cited show that spontaneous delivery occurs 10 to 11 per cent. more frequently in women who have already borne children. With pelves over 8.6 cm., the fetal mortality scarcely surpassed that with normal pelves, being about 9 per cent., while with pelves of less than 8 cm. fully 30 per cent. of the fetuses succumbed. The influence of preceding births did not seem to affect the fetal mortality, but infants weighing not much over 5 pounds died in a proportion ranging from 22.85 to 80 per cent., irrespective of the degree of contraction of the pelvis. With infants weighing from 5 to 6 pounds and a trifle over, the mortality was from 6 to 8 per cent., increasing to 20 per cent. with pelves between 8.1 and 8.5 cm. Under 5 and 6 pounds, with a conjugate diameter of 8 cm., the mortality is a little less than for the heavier children, but it amounted to 33 and 50 per cent. The data presented show that the fact of the contracted pelvis *in itself* does not render the prognosis for the mother any more serious.

Revue de Chirurgie, Paris

November 10, XXX, No. 11, pp. 945-1080

41 The Pain With Echinococcus Disease of the Liver. (Douleur dans les kystes hydatiques.) E. Quénu.
42 *Treatment of Surgical Tuberculosis of Bones and Joints. (Des progrès réalisés dans le traitement chirurgical des tuberculoses ostéoarticulaires.) P. Vignard and R. Armand.

42. **Treatment of Surgical Tuberculosis of Bones and Joints.**—Vignard and Armand conclude their long article, which is accompanied by thirty-one skiagraphs of some of the cases reported, with the statement that the natural tendency toward a cure of tuberculosis, especially in the joints in the young, imposes the necessity for prolonged immobilization as the best treatment in such cases. Local injections may be advisable as an adjuvant, especially in residual abscesses after healing over of the bone lesions. They have no action on the latter, as it is impossible for them to reach all parts of the lesion effectually, and the fluid injected has no effect on bone tissue, but in a synovial or abscess pocket they may do good service. Whenever a focus of tuberculous osteitis is accessible, it should be cleared out, and operative treatment is also indicated for a joint lesion if no turn for the better is apparent after five or ten months of immobilization. The operation should be concluded by plugging the cavity left in bone or joint with Mosetig filling. Everything must be done to avoid the necessity for drainage, at least for any length of time. Treatment on these principles is applicable only in cases in which there is no fistula and the kidneys are sound.

Revue de Médecine, Paris

November, XXX, No. 11, pp. 857-936

43 Experimental Bacillary Arthritis with Effusion. (Contribution à l'étude pathogénique des arthropathies bacillaires.) L. Landouzy, H. Gougerot and H. Salin.
44 *Central Nervous System of Children with Inherited Taints. II. (Le système nerveux central d'enfants issus de parents en état morbide.) G. Catola.

44. **Nervous System with Inherited Taints.**—The conception of an inherited predisposition to disease is sustained by the histologic findings in the central nervous system in eight children examined by Catola. The mothers had had tuberculosis, nephritis, pernicious anemia or syphilis, and the nerve tissue in the children showed imperfect or otherwise abnormal structure. The toxins seem to be able to induce hypoplasia or hyperplasia, affording an anatomic basis for the predisposition to disease in such families.

Semaine Médicale, Paris

November 23, XXX, No. 47, pp. 553-564

45 *Diffuse Calcification of Connective and Subcutaneous Tissue. (La calcinose généralisée et ses formes anatomiques interstitielle et sous-cutanée.) J. Lhermitte.

45. **Diffuse Calcification of Connective and Subcutaneous Tissue.**—Lhermitte calls attention to an anatomic-clinical syndrome characterized by infiltration with lime of the subcutaneous and connective tissue. This generalized calcinosis, as he calls it, is liable to affect both sexes, but is most frequent between the ages of 8 and 20. None of the specific infections seems to have anything to do with it, unless possibly syphilis. Krause and Trappe noticed marked improvement in their case under mercurial treatment, although there were no signs of syphilis and the Wassermann reaction was negative. Mercurial treatment was even more effectual in Stradiotti's case in which there was a history of untreated syphilis in youth; at the age of 44 a profusion of subcutaneous nodules containing lime subsided under mercurial treatment. The data reported seem to indicate further a close connection between this diffuse calcinosis and scleroderma. In a number of the cases on record there was irregular, pronounced enlargement of the thyroid. In many cases local trauma seemed to be responsible for the first development of the subcutaneous form of the affection. The interstitial or muscle-

tendon type is less frequent, but much more serious The two forms have been observed together in some cases, and both are liable to be accompanied by vasomotor disturbances, sclerema, changes in the skin and pigmentation

Berliner klinische Wochenschrift

October 31, XLVII, No 44, pp 2005 2044

46 Semicentennial of Berlin Medical Society H Senator
47 Diagnosis of Nasal Diphtheria in Young Infants Blochmann
48 *Direct Determination of Free Acid in the Stomach (Ein neues Verfahren zum direkten Nachweis der freien Säure im Magen) E Fuld
49 Iodin Cachexia with Arteriosclerosis M Emmerich
50 The Retrojugular Glands in Early Diagnosis of Experimental Tuberculosis G Kiralyfi
51 Standards for Normal Heart Outlines in Radiography M L Dorn
52 Von Dungern's Modification of Wassermann Test R Fruhwald and F Weiler
53 Technic for Vein Anesthesia A Schlesinger
54 Biology of Tubercle Bacilli H Aronson
55 *Roentgen Fluoroscopy Without Fluorescent Screen (Rontgendurchleuchtung ohne Schirm) A Bauer

November 7, No 45, pp 2045 2088

56 Salvarsan (Ehrlich's 606) in Nervous Diseases Frenkel Heiden
57 The Muscle Findings in Cerebral and Spinal Muscular Atrophy F H Lewy
58 *Occurrence and Diagnostic Importance of Peptid Splitting Enzyme in Stomach Content L Kuttner and G Pulvermacher
59 Morphologic Changes in Blood with Simple and Exophthalmic Goiter U Carpi
60 Factors Involved in Production of Fever (Zur Beleuchtung der Hyperthermie) S Widerøe
61 Tuberculosis of Adult Knee Joint (Tuberkulose des erwachsenen Kniegelenks mit einer neuen Theorie und Operationsmethode) L W Ely
62 Acute Myeloid Leukemia with Green Bone Marrow S M Zypkin Commenced in No 44
63 Infanticide (Der Kindesmord) Marx

48 **Test for Free Acid in Stomach Content.**—One hour after a test breakfast the patient drinks a swallow of an aqueous solution of sodium bicarbonate while the physician is auscultating him The arrival of the fluid in the stomach can be readily heard and also in a few minutes, the sounds of effervescence in case there is hydrochloric acid present in the stomach content Fuld has not been able to find any effervescence auscultation test previously described in the literature The effervescence can be detected also by Roentgen ray examination, and if the patient is told to stand up there is generally an eructation The only source of error liable is when there is gas already in the stomach from fermentation This possibility should be excluded by auscultation before giving the soda The method is so simple and easy that the test can be repeatedly applied without inconvenience to the patient The amount of acid present can be approximately estimated by having the patient take another sip of the soda solution If there is no further effervescence, the first sip must have neutralized all the free acid With hyperacidity several sips are necessary to accomplish this He estimates at 75 per cent the proportion of cases of gastric cancer in which the secretion of hydrochloric acid has been arrested Consequently the above simple means for determining the presence or absence of free acid in the stomach should be included, he declares in every routine examination of a patient passing middle life, just as the urine is examined for albumin and sugar

55 **Screenless Fluoroscopy**—Bauer applies to the skin, instead of to the screen, the coating of fluorescent paint This is done by drawing over the part a tricot cover coated with the platino cyanid of barium The result is surprising and fascinating, as the parts thus become luminous, free from the drawbacks of projection of the object on a plane surface The chemical is applied to the inside of the tricot cuff or bandage, which is then drawn over or wound around the part to be examined It then becomes actually transparent, so far as the soft parts are concerned, while the bones stand out in normal relief

58 **Peptid Splitting Ferment in Stomach Content**—Kuttner and Pulvermacher state that the findings with the glycyl tryptophan test (described in THE JOURNAL, Jan 1, 1910, page 86) and their modification of it failed to confirm the assumption that the findings can be utilized in the diagnosis of stomach affections, especially of gastric cancer However, the findings seem to throw light on the functioning of the pancreas and the test may prove useful for this purpose.

Deutsches Archiv fur klinische Medizin, Leipsic

C, Nos 5 6, pp 429 640 Last indexed Nov 12, p 1770

64 Orthodiagraphic Examination of the Heart in the Tuberculous (Herzgrosse bei Tuberkulosen) R Beck
65 Histology of the Intestine with Pernicious Anemia V. Schlaepfer
66 *Leukocyte Count in Different Parts of the Circulation at the Same Time (Leukocytenzahlung und Inhomogenitat) V Ellermann and A Erlandsen
67 Infantile Splenic Anemia from Leishman's Bodies (Kala-Azar ?) R Jemma
68 *Chronic Intestinal Disease and Bone Disease (Chronische Darmstorungen und Knochenerkrankung) L Koll
69 *Parasitic Hemoptysis L Abend
70 Action on Size of Heart of Experimental Anemia H Ludke and L Schuller
71 Acute Leukemia with Paratyphoid B Infection F Voswinkel and G A Dunzelt
72 Albuminous Expectoration After Thoracocentesis W Beyer
73 Experimental Production of Blood Picture Simulating Leukemia H Ludke
74 *Carbohydrate Metabolism (Kohlehydratstoffwechsel L Wacker and F Poly
75 *Study of Fever (Klinische und experimentelle Untersuchungen uber Genese und Verlauf des Fiebers) H Ludke and J Sturm
76 *Hemolytic Test for Gastric Cancer III E Gräfe and W Rohmer
77 Alternating Pulse J Strasburger
78 Induced Electric Phenomena in Human Body (Induzierte elektrische Phanomene am menschlichen Korper und darauf beruhendes Tonen der Haut) J Müller

66 Summarized in these columns, Sept 24, 1910, page 1156

68 **Chronic Intestinal Disease and Bone Disease**—In the first of the four cases reported by Koll, intestinal disturbances had persisted for years, with fetid diarrhea at times In each case the bones showed marked and progressive disturbances in development softening or hyperplasia and abnormal development of the epiphyses In two of the cases there does not seem to be any doubt that the bowel trouble was mainly responsible for the abnormal conditions in the bones, the cure of the latter as the bowel trouble was cured confirms this assumption There is every probability that the same factor was responsible in the other two cases The patients were women between 18 and 29 years old and one man of 73 The diarrhea began in early childhood in three of the cases and at the age of 24 in the other, and it had recurred at intervals during the years since, the features of the diarrhea indicating some affection of the small and upper large intestine There was a suspicion of tuberculous infection as the cause of the intestinal trouble in each case, confirmed by necropsy in one. but the complete recovery in two other cases scarcely sustains this assumption The bone anomalies suggested osteomalacia in one case, rachitis in two and acromegaly in the other The facts observed suggest that bone affections of this kind should be regarded not so much from the standpoint of strict differential diagnosis, but should be considered as the local manifestations of some constitutional chemical process of intoxication

69 **Parasitic Hemoptysis**—The patient in Abend's case was a miller 44 years old, who had been living in the United States for twenty years, working on railroad construction and in mills, and coughing up blood occasionally during the last ten years Each morning he spit up a little blood, but never at other times and he had no dyspnea nor pain, but sometimes a sense of oppression and formication in the region of the left lower ribs, with occasional vertigo Otherwise he felt well, and after thus expectorating blood for about twenty four years, suddenly it ceased and the man has been well since Abend found in the sputum the ova of some parasite, which he believes is the *Distomum pulmonale*, and the Roentgen rays show several small pinhead oval shadows in the center of the lung, similar to the miliary nodules which Miura found in some cases of supposed distomiasis No fatal hemorrhage from this cause is on record

74 **Carbohydrate Metabolism**—Wacker and Poly report research on the normal sugar content of the human blood. sugar in various parts of the vascular regions in the dog and rabbit, hyperglycemia and the permeability of the kidneys for sugar, chemical regulation of body temperature, fever and action of antipyretics and the sugar content of the blood in pathologic conditions in 126 patients

75 **Research on Fever**—The findings in eighty cases of various acute infectious diseases are compared and certain

laws are seen to prevail indicating a close connection between the course of the fever and the bacterial content of the blood. These assumptions were confirmed by experiments on animals. It proved possible to prevent fatal collapse in animals after injection of bacterial toxins by keeping them extra warm just before and following the injections, thus preventing the reduction of temperature otherwise constant after the injections. Anything tending to induce hypersusceptibility may upset the temperature balance. Disturbances in the temperature regulation and formation of antibodies are signs of the altered reaction capacity of the organism, but the central nervous system is the chief point of attack for the toxins and endotoxins. When the nervous centers are intensely affected, phenomena of collapse follow, drop in temperature and blood-pressure, and inability to produce antibodies; when the nerve-centers are only moderately affected, the temperature rises and antibodies are produced unhindered.

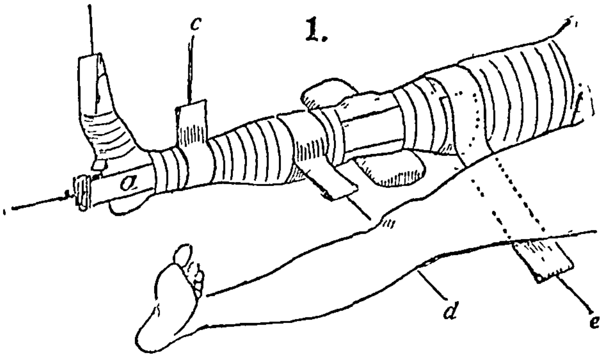
76. **Diagnosis of Gastric Cancer from Hemolysis by Stomach Content.**—Gräfe and Röhmer say that the presence of oleic acid in the stomach content, which is responsible for the hemolysis observed, is not specific for cancer, but it indicates something wrong, and in conjunction with other symptoms is proving a valuable aid in differentiation of malignant disease. A previous communication on the subject was summarized in The Journal, Oct. 29, 1910, page 1602.

Deutsche medizinische Wochenschrift, Berlin

November 17, XXXVI, No. 46, pp. 2129-2176

79 *Extension Treatment of Fractures. (Behandlung der Frakturen mit Streckverbänden.) B. Bardenheuer and R. Graessner.
80 *Convulsions After Orthopedic Operations. (Krampfanfälle nach orthopädischen Operationen.) A. Codivilla.
81 *Functional Tests of the Kidneys. (Bedeutung der funktionellen Nierenuntersuchung.) L. Casper.
82 Disadvantages of Endotin in Treatment of Tuberculosis. (Zur Behandlung der Tuberkulose mit eiweissfreien Tuberkulinpräparaten.) G. Jochmann and B. Möllers.
83 Cause of Dilatation of the Heart and High Blood-Pressure with Arteriosclerosis in the Aorta. (Zur Entstehung der Herzhypertrophie und Blutdrucksteigerung bei Aortensklerosen.) A. Bittorf.
84 Salvarsan (Ehrlich's "606") in Syphilis. J. Hecker.
85 Action of Salvarsan (Ehrlich's "606") on Spirochetes in Mouth. P. H. Gerber.
86 Dietetic Treatment of Diabetes. (Ernährungstherapie des Diabetes mellitus.) G. Graul.

79. **Extension in Treatment of Fractures.**—Bardenheuer presents here the conclusions of his years of pioneer work in this line, describing the technic for continuous elastic traction in various directions, which he regards as the best means to restore normal functioning to fractured limbs. The contraction of the muscles is often the chief hindrance to reduction of the fracture, and consequently, he says, extension should be applied as early as possible after the fracture, and it should be strong enough to overcome the elastic inflammatory retraction of the muscles. As the muscles act not only lengthwise of the limb, but also concentrically, traction must be exerted from the sides as well as from the end of the limb, and be adapted to counteract any tendency to rotation. By exact apposition of the stumps the tendency to production of callus is reduced to the minimum, which is extremely important for the future functioning of the limb; the aim should be to reduce the healing of the stumps to a linear scar, just as in the healing of a skin wound. Healing by primary intention of a skin wound is always the shorter process, and it is the same with healing of the fracture. Forcible reduction is rendered unnecessary with the extension technic, as this gradually brings the stumps into their normal position, unless the displacement is extreme. When it has to be done he gives ether. A good functional result can be anticipated only when the elasticity of the muscles and of all the tissues is maintained unimpaired. They lose their elasticity more and more the longer they are inactive, and most so when there is concomitant inflammation. By the elastic traction of his extension technic the retracted muscles are stretched while the stumps having been restored to normal position, there is no further irritation from them on the soft parts and resulting inflammation is prevented, checked or its consequences attenuated. He commences active motion with a fractured wrist as early as the fourth day, the fifth with fractured ankle, the third week with fractured knee, exercising the joint for half an hour twice a day. The excursions should be merely what can be done without pain. The weights are removed when the limb is being exercised. The patient lies on a hair mattress, or a board can be placed under the limb. The adhesive plaster must be non-irritating, 6 cm. wide for the lengthwise strips and half this width wound around the limb. The front of the tibia and the malleoli are protected by folded gauze;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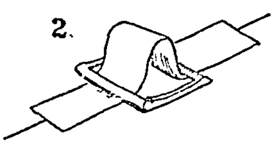
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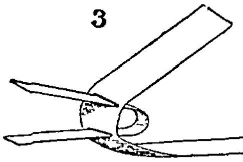
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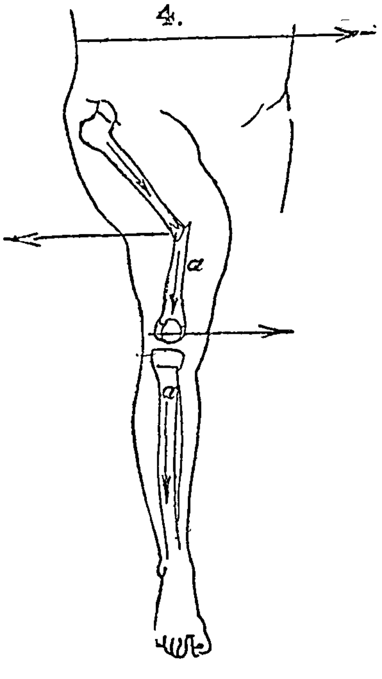
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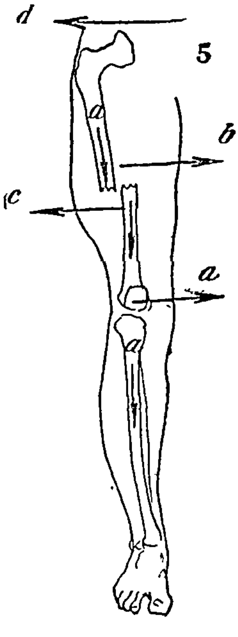
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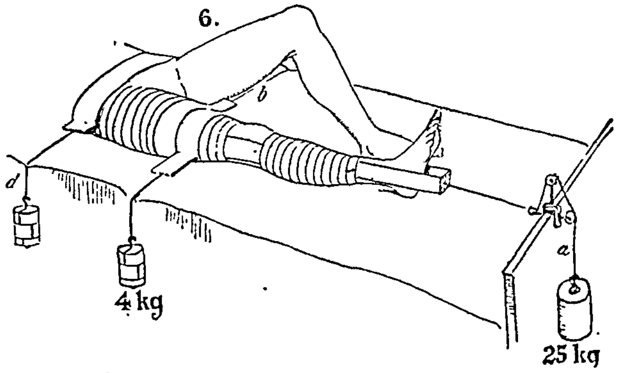
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cotton becomes lumpy. The extension is applied to the region of the stumps with counterextension for the farther end of the bone, as in Figure 4. He advocates extension on these principles for all simple fractures of the extremities; for dislocations after reduction, as the Roentgen rays show that dislocations are almost always accompanied by more or less splitting off of bone or lacerations, and also for all compound fractures of the extremities if the skin has been merely pierced by the bone, or if the soft parts are not seriously injured and there is reason to assume absence of infection. He disapproves of plaster casts in all cases of fracture, except when needed for transportation of the patient, especially in war; for the delirious, to prevent self-injury; for exceptional circumstances in which a walking apparatus is required, for after treatment of fractured bones that have been surgically united—in both these last classes the plaster cast must be made removable to permit exercise of the limb—and, lastly, for compound fractures when the size, location, extent and nature of the injury may require immobilization in a solid cast

Figure 1 shows the extension for fracture of the leg not far below the knee; Figure 2 shows the device by which downward traction can be applied from each side; Figure 3 the plaster crossed to pull split off parts of bone into apposition. Figure 4 shows the direction of traction, and Figure 6 shows the same in application, while Figure 5 calls for traction in different directions He uses a spring extension apparatus for fracture of the arm The traction applied to the waist is to keep the patient from moving around.

80. **Convulsions After Orthopedic Operations.**—Codivilla has encountered nine cases of this kind, Schanz ten, and Hoffa. Drehmann and others have reported some fatal cases The convulsions are a severe complication of the operation, and Codivilla thinks that there can be no doubt that they are the result of traction on the nerve terminals by the extension applied to complete the operative correction of the deformity in question. The excessive traction on the soft parts and nerves of the hips affects by reflex action the central nervous system, entailing a condition which leads to the outbreak of actual epileptic convulsions. Neri has confirmed by experiments on animals the correctness of this view of the traction on the nerves in the region as the cause for the convulsions, especially the continuous traction on the sciatic nerve. Children and adults with a predisposition to nervous disturbances are particularly liable to be affected. The main point in treatment of the attack or in prevention is to relieve the traction on the soft parts, either by loosening the extension or by placing the hip in a position to prevent the excessive traction on the soft parts. He advises a preliminary course of bromid for epileptics and all persons inclined to be unusually nervous, and, when the soft parts have to be stretched, to do this very cautiously and gradually. In his cases the convulsions did not develop until several days after the operation; they were usually preceded by prodromal manifestations· more or less headache, the patient is particularly restless at night and unable to sleep, with occasional painful spasms in the limb Children do not cry but moan almost uninterruptedly, while older patients keep sighing and complain of distress, and there may be a tendency to delirium, especially at night The pulse is slow and tense, the pupils mydriatic, the light reaction sluggish and incomplete, and the pupils may be unequal The patients may complain of abdominal pain and difficulty in urinating. This prodromal stage may last for hours or days and may subside without development of actual convulsions. The convulsions generally begin mild and brief, but grow gradually worse until the spasms are practically continuous During the pauses the patient may regain consciousness, but generally there is more or less apathy or stupor. The convulsions resemble an epileptic seizure in every particular, he states Schanz ascribes them to fat embolism, but there are numerous arguments against this view.

81. **Tests of Kidney Functioning.**—In this postgraduate lecture Casper lauds the great advances made in functional tests of the kidneys which have revolutionized the prognosis of *nephrectomy. He adds that the tests are also proving of great* value in determining the indications for prostatectomy, as the chances for a successful outcome are better the sounder the kidneys.

Medizinische Klinik, Berlin

November 20, VI, No 47, pp 1845-1884

87 *Menus for Dietetic Treatment in Health Resorts. (Diät in Kurorten und Anstalten) W. Schlesinger.
88 Focal Reaction and Hypersusceptibility in Tuberculin Treatment of Pulmonary Tuberculosis (Herdreaktion und Ueberempfindlichkeit bei der Tuberkulinbehandlung der Lungentuberkulose) J. W. Samson
89 Treatment of Eczema in Infants Galewsky.

87. **Special Diets at Health Resorts and in Institutions.**—Schlesinger commends the introduction at Homburg and some other watering places of special menus for certain classes of visitors in search of health, saying that these special diets represent a great advance. But he thinks that the menus provided might be improved on, and he suggests menus for four diets graduated to the digestive capacity of the individual rather than to the special organ which may be diseased. The menus outlined are comprehensive enough for ample individualization for indications and tastes. Diet 1 is a fluid diet for the very sick. Diet 2 is designed to spare the stomach all extra work; all the articles are passed through a sieve or very finely chopped, and extensive use is made of beaten whites of eggs which serve the useful purpose of keeping the particles of the food apart and rendering them still more porous as the dish is cooked. Meat is allowed only at noon. Diet 3 is mainly a milk and vegetable diet, free from meat and extractives, and Diet 4 is for diabetics, excluding sugar and flour. All the menus are arranged for three meals a day, plus two light lunches.

Monatsschrift für Kinderheilkunde, Leipsic

IX, Nos 5-6, pp 275-342 Last indexed Oct 4, p 1278

90 *Blood Pressure in Children (Blutdruck im Kindesalter) W. Kaupe
91 *Salt Fever (Zur Theorie des Salzfiebers) P Helm and K. John
92 Food Requirements of Prematurely Born Children. (Zur Physiologie des neugeborenen Kindes I.) W. Berk
93 Carbohydrates in Infant Feeding (Rolle der Kohlehydrate bei der Ernährun
94 Protest Against Infants in Incubators (El

90. **Blood-Pressure in Children.**—Kaupe's findings parallel those of Seiler and Kriss already mentioned in THE JOURNAL, Sept. 3, 1910, page 893.

91. **Salt Fever.**—It seems evident from the research reported that "salt fever" is the result of heat congestion in the interior as the water normally eliminated in perspiration is drawn away from the skin by the influence of the salt. Drinking water restores the proper balance The fever with the retained water is only an indirect result—the salt in itself not raising the temperature.

Münchener medizinische Wochenschrift

November 15, LVII, No 46, pp. 2393-2448

95 Immunization of Animals Against Tuberculosis Ruppel.
96 *Arthropods in Transmission of Disease (Arthropoden als Krankheitsüberträger) R Müller.
97 Salvarsan (Ehrlich's "606") in Syphilis of the Nervous System G Treupel
98 Idem H Willige.
99 Unfavorable Experiences with Trypsin in Surgical Tuberculosis P Sohler
100 Staining Technic for Determination of Certain Organic Oxidizing Substances (Ueber den farbchemischen Nachweis einiger oxydierender Substanzen des Korpers) W Loele
101 *Experiences with Spinal Anesthesia (Anwendung der Lumbalanästhesie in der Universitäts Frauenklinik in Leipzig) E Zweifel
102 Skiagraphs of Flat Foot (Der Plattfuss im Röntgenbilde) G Muskat
103 Chart for Calories in Infant Feeding (Zur kalorimetrischen Bewertung der Säuglingsnahrung) H v Mettenheimer
104 Diphtheria Antitoxin in Treatment of Hemophilia Two Cases H. Krauss
105 Multiple Osteomas of the Trachea S Levinger
106 Typhoid at Augsburg (Vorkommen von Unterleibstyphus in der Stadt Augsburg) F Bohm

96. **Transmission of Disease by Insects, Etc.**—Muller gives a nearly two-column list of arthropods, insects, spiders, etc., important from a medical point of view as transmitters of disease, and discusses what has been learned on the subject *to date.*

101. Spinal Anesthesia.—Zweifel states that the spinal technic has been applied in 1,500 cases at Leipsic without a fatality. It is generally combined with the preliminary scopolamin-morphin technic, and this is all that the patients remember of the operation, asking as they rouse, hours after the operation, when it is going to begin. The only by-effects of consequence were headache and pain in the back of the neck in about 5 or 6 per cent. of the patients. The headache persisted on an average for two days; it was aggravated in some cases by the slightest movement of the head. One patient still had headache when dismissed from the hospital six weeks after the operation. Headache developed in 8 per cent. of the eighty-eight vaginal operations, and only in 2 per cent. of the 231 abdominal operations. In a case of herniotomy and one of the Alexander-Adams operation, the cerebrospinal fluid spurted in a strong jet, and both these patients suffered from constant vomiting and intense headache for one or two days, the pain persisting in one case for two weeks. The disturbances in these cases were evidently the result of the changes in the pressure in the fluid, and the technic should not permit such fluctuations in the pressure.

Therapeutische Monatshefte, Berlin

November, XXIV, No. 11, pp. 593-668

107 History of and Experiences with Arsacetin. Heinrich.
108 Pyocyanase in Treatment of Soft Chancre. A. Hatzfeld.
109 *Gymnastic Treatment of Abdominal Ptosis or Constipation. (Zur Therapie der asthenischen Zustände der Unterleibsorgane.) J. Oldevig.
110 *Danger of Castor Oil in Phosphorus Poisoning. (Unbrauchbarkeit des Rizinusöls als Abführmittel bei Phosphorvergiftung.) M. Rothmann.
111 Transplantation of the Biceps Femoris. (Verpflanzung des Musculus biceps femoris zur Hebung pathologischer Aussenrotation des Oberschenkels bei spinaler Kinderlähmung.) A. Hildebrandt.

109. Exercises in Treatment of Asthenic Conditions in the Abdomen.—Oldevig emphasizes the necessity for toning up the muscles as the best means for restoring normal conditions in case of ptosis of the viscera, constipation or other abdominal disturbances in which weakness of the abdominal muscles can be a factor. Exercise is the only way to strengthen the muscles, and if the muscle can be exercised singly, the greater the effect. By exercising the muscles which are under control of the will, we are able to influence the organs which are beyond this control. The special exercise which he has found most effectual in cases of ptosis, tendency to hernia and constipation, is with the patient reclining, his arms at his side and one foot laid over the other. He then lifts his pelvis as high as possible, and while he is doing this an attendant opposes resistance to this raising of the pelvis; seated on the long, low bench beside the patient he places his hands on the crests of the ilium and presses downward as the patient lifts the pelvis. When the pelvis is raised as high as the patient can bring it against the resistance of the attendant, then the attendant presses it back down on the table, the patient striving to resist this downward movement. The patient breathes deeply before he commences the exercise, and it is done during slow expiration, although it may take a little practice to do this at first. After the exercise has been done three or four times the patient rests. The exercise has a tendency to increase the heart action and the supply of the blood to the head. When the exercise is correctly done the isolated group of muscles being exercised feel as if a firm, funnel-shaped bandage were wound around the entire pelvis from the perineum to the lower part of the thorax.

110. Extra Solubility of Phosphorus in Castor Oil.—The research reported confirms the dangers of giving castor oil in case of acute phosphorus poisoning, as the phosphorus is thus rendered more soluble and larger amounts are absorbed. The same applies also probably to other drugs soluble in oil, nitrobenzol, santonin, cantharidin, etc.

Therapie der Gegenwart, Berlin

November, LI, No. 11, pp. 481-528

112 *Digitalis. E. v. Leyden.
113 *Prognosis of Exophthalmic Goiter. (Prognose der Basedowschen Krankheit.) L. Syllaba.
114 *Treatment of Obesity. (Neue Gesichtspunkte für Entfettungskuren mittels diätetischer Küche.) W. Sternberg.
115 *Principles in the Treatment of Hernia. F. Karewski.

112. Digitalis.—This is a lecture delivered by von Leyden eleven years ago, but not previously published. He urges to refrain from giving digitalis unless there is urgent need for it, and not to give it too early. It seems to be established that digitalis acts only on the left ventricle; when the right ventricle is weak digitalis acts injuriously rather than usefully, possibly increasing the dyspnea. Consequently he regards this drug as contra-indicated with mitral stenosis, with emphysema and kyphoscoliosis. If it works under these conditions it is only on account of the secondary weakness of the left ventricle. He assumes that digitalis acts only on the musculature of the heart, and consequently will have little action if a large part of the muscle is degenerated. With chronic myocarditis it frequently fails completely. Even with valvular defects, its lack of action may be explained by the isolated myocarditic foci accompanying the endocarditic process. He regards the action of digitalis as uncertain and dubious when there is fever, preferring to give 5 or 8 drops twice a day of tincture of strophanthus.

113. Prognosis of Exophthalmic Goiter.—Syllaba makes an important contribution to this subject by his study of fifty-one cases in which the history of the patients has been followed for several years, the series commencing with 1895. Treatment was exclusively medical with two exceptions, and the ultimate outcome is 19.6 per cent. improved and 33.3 cured, that is, favorable in 52.9 per cent. He reviews the experiences of others with non-operative treatment, all confirming his experience that over half of the patients with exophthalmic goiter can be permanently improved and that one-third are completely cured, or at most left with a little exophthalmos. In his seventeen cases of complete cures there were four or five in which the exophthalmic goiter was comparatively mild, but in the others the syndrome was very severe. In the two cases in which an adjuvant operation was performed there was recurrence after two years in one case and the other patient died five months afterward from asystolia; she had been left with postoperative tetany and recurrent paralysis, in addition to her previous disturbances. In the various cases treatment had been manifold and various; any medical measure may cure and all may fail. One patient is improved by one method, another may be uninfluenced by the whole arsenal. In three cases the symptoms flared up under iodin treatment, in one given internally and in the others after prolonged local applications. This experience and that of others confirm the fact that iodin seems to be a poison for patients with exophthalmic goiter. He urges the necessity for careful study of every case of exophthalmic goiter under medical treatment and perpetually thereafter, not losing sight of these patients. Only by systematic series of protracted observations will it be possible to form a correct judgment in regard to the comparative merits of operative and medical measures. There is nothing on record to date giving long enough study of the medical cases for anything like a just appreciation. He begs that practitioners and institutions will keep a register of all patients with exophthalmic goiter and supervise the condition at regular intervals thereafter, even when all is apparently well with them.

114. Treatment of Obesity.—Sternberg's suggestions for improving the traditional routine in the matter of diet have been frequently mentioned in these columns. He here asserts that the subjective phase of dietetics has been neglected altogether too much in the past. It deserves special attention in the dietetic treatment of obesity, particularly measures to reduce the appetite. It is a familiar fact that candy and other sweets taken between meals or just before a meal spoil the appetite for everything except more sweets. Coffee has also a pronounced effect in reducing the appetite, making the individual feel that he has eaten sufficiently. Tradition utilizes these properties by permitting sweets and coffee only at the end of a hearty meal, but in the obese this practice should be reversed. The sweets and the coffee should be taken first, and they will enable the individual to feel satisfied with a much smaller meal than otherwise his appetite would call for. He suggests that mannite is particularly useful for the sweets in cases of obesity, as it has a laxative action. He quotes Pliny to show that the action of sweets in reducing the craving for food was known in ancient times, licorice being recommended to relieve hunger and thirst This, Steinberg says, is the more important, as sugar was not known to Pliny, and honey and licorice were about the only sweets known Alcohol seems to have the opposite effect to coffee and sweets in this respect, as it stimulates the appetite Drugs to deaden the sensibility of the tongue also have an inhibiting action on the appetite He questioned the employees in chocolate factories and found that all were unanimous in saying that if they nibbled or tasted chocolate not long before dinner they spoiled their appetite for the meal The data cited are useful hints in treatment of the obese, as also from the opposite standpoint for individuals whose appetite needs fostering

115 **Principles in the Treatment of Hernia**—Karewski discusses the general principles and the special indications emphasizing in particular the importance of examining all the points where hernia is possible in every case of violent abdominal pain, vomiting and tympanites for which no other cause is apparent as an unsuspected hernia may be the cause of the mischief not forgetting the obturator foramen and the sacrosciatic notch.

Zentralblatt fur Gynakologie, Leipsic

November 19, XXXIV No 47, pp 1529 1552

116 Carcinoma of the Stump of the Cervix Five Years After Supravaginal Amputation of the Myomatous Uterus (Karzinom des Cervixstumpfes nach der Chrobak schen (Myomoperation) F Weisse

117 Successful Decapsulation of the Kidney in Eclampsia Continuing After Delivery (Nierenenthulsung wegen Eklampsie) H Bollenhagen

118 *Advantages of Atropin in Treatment of Dysmenorrhea R Dienkhahn

119 Non Sensibility of Internal Genital Organs P Brose

118 **Atropin in Treatment of Dysmenorrhea.**—Dienkhahn reports a number of cases of dysmenorrhea in which injection into the cervical canal of 1 mg atropin dissolved in 1 c c. water arrested at once the colic spasms in the uterus or prevented their development If there is no speculum or syringe at hand, the same effect can be realized by introducing a small cotton wad moistened with a 1 per cent solution of atropin and pressed far back against the posterior vault of the vagina This simple measure has proved effectual in his experience of fifteen years Its efficacy is explained by Schindler's experimental research on ninety three animals, showing how atropin paralyzes the automatic action of the uterus and its mechanical excitability Dienkhahn's experience has shown that even a single application of the atropin may cure a chronic tendency to dysmenorrhea when there are no morbid changes in the genital organs He adds that mild acute and chronic inflammatory conditions in the uterus may yield promptly to sitz baths or other measures when the uterus is under the influence of atropin, when otherwise the affections are refractory to all treatment He wonders that more attention is not paid to atropin as a means of enforcing rest for the uterus in morbid conditions, and states that his communication is for the purpose of rescuing atropin from the neglect into which it seems to have fallen in respect to the treatment of painful affections of the uterus

Riforma Medica, Naples

November 7, XXV, No 45, pp 1233 1260

120 Clinical Forms of Gastric Ulcer G Rummo

121 Action of Caffein on the Kidneys (L azione sui reni della caffeina ad uso protratto) A Tomaselli

122 Polycystic Kidneys (Contributo allo studio isto patogenetico del rene policistico) L Ferrannini

Hospitalstidende, Copenhagen

October 26, LIII, No 43, pp 1201 1224

123 *Hypophysis Disease (Bidrag till Hypophyselidelsernes operative Behandling) E Schmiegelow Commenced in No 42

123 **Operative Treatment of Hypophysis Tumors**—Schmiegelow summarizes the literature to date on the transnasal removal of hypophysis tumors, including West's contribution to the subject and thirteen cases that have been reported by Eiselsberg, Hochenegg, Kocher and others He then reports a case from his own experience, the patient was a woman of 27 healthy until puberty, when acromegaly developed At the age of 23 she began to have headache gradually becoming accompanied by complete atrophy of the right optic nerve Trouble was beginning in the left eye. when the cystic tumor in the hypophysis was successfully removed by the transnasal route The headache ceased at once and vision in the left eye returned to normal All was proceeding favorably until three weeks after the operation. when acute edema of the brain developed, proving rapidly fatal Kocher has had a similar experience his patient, a woman of 30, dying suddenly four weeks after the operation, and Schloffer also lost a patient from this cause nearly three months after the successful operation The pressure of the tumor on the veins in the base of the brain had evidently compromised the circulation in the region and in the brain generally In Schmiegelow's case and in a number on record the temperature ran up very high as the acute edema developed in the brain and a fulminating meningitis was suspected, but the meninges were found comparatively intact. The rise in temperature is probably the result of irritation of the thalamus from the mechanical compression His patient died too soon for any marked influence on the acromegaly to be apparent, but during the last week she had commented on the improvement in her hands In conclusion, Schmiegelow calls attention to the invaluable service rendered by peroral intubation during the hour and a half long operation The tube was introduced after the patient was under the influence of ether The anesthesia was then continued with chloroform. The intubation permitted the throat around the tube and the mouth to be packed with sponges while respiration proceeded regularly and amply, there was no tendency to cough or vomit and the hemorrhage was minimal

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for review in the interests of our readers and as space permits

PRELIMINARY REPORT ON THE KILLING OF RATS AND RAT FLEAS BY HYDROCYANIC ACID GAS By Capt W D H Stevenson M B (Bombay Bacteriologic Laboratory) Scientific Memoirs, by Officers of the Medical and Sanitary Departments of the Government of India New Series No 38 Issued Under the Authority of the Government of India by the Sanitary Commissioner with the Government of India Boards Price 8 annas Pp 28 Calcutta: Superintendent Government Printing India 1910

THE RACIAL ANATOMY OF THE PHILIPPINE ISLANDERS Introducing New Methods of Anthropology and Showing Their Application to the Filipinos with a Classification of Human Ears and a Scheme for the Heredity of Anatomical Characters in Man By Robert Bennett Bean M D Associate Professor of Anatomy, Tulane University of Louisiana New Orleans Cloth Price $2 net Pp. 236 with 26 illustrations Philadelphia J B Lippincott Co, 1910.

AMERICAN RED CROSS ABRIDGED TEXT BOOK ON FIRST AID General Edition A Manual of Instruction By Major Charles Lynch Medical Corps, United States Army Prepared for and Endorsed by the American Red Cross Paper Price 30 cents Pp 183 with 55 illustrations Philadelphia P Blakiston's Son & Co 1910

THE DISEASES OF CHINA, INCLUDING FORMOSA AND KOREA By W Hamilton Jefferys M D, Univ of Pennsylvania, Medical Missionary in China and James L Maxwell, M D London Medical Missionary in Formosa Cloth Price $6 net Pp 716 with 360 illustrations Philadelphia P Blakiston s Son & Co, 1910

ANNUAL REPORT OF THE SURGEON GENERAL U S NAVY, CHIEF OF THE BUREAU OF MEDICINE AND SURGERY, TO THE SECRETARY OF THE NAVY For the Fiscal Year 1910 Navy Department, Bureau of Medicine and Surgery Paper Pp 179 Washington Government Printing Office 1910

LESSONS ON THE EYE For the Use of Undergraduate Students. By Frank L Henderson M D, ex President of the St Louis Medical Society (1905) Fourth Edition Cloth Price $1 50 net Pp 258 with 138 illustrations Philadelphia P Blakiston s Son & Co 1910

FIRST NATIONAL CONFERENCE ON INDUSTRIAL DISEASES [PROCEEDINGS] Chicago June 10, 1910 Publication No 10 American Association for Labor Legislation Paper Pp 52 New York American Association for Labor Legislation, 1 Madison Ave, 1910

THE NON SURGICAL TREATMENT OF DUODENAL ULCER By George Herschell M D London Lately Senior Physician to the Kensington General Hospital Paper Price 1 shilling Pp 39 London Henry J Glaisher, 55 Wigmore Street, W, 1910

ABSTRACT OF PROCEEDINGS, UNITED STATES PHARMACOPEIAL CONVENTION, 1910 Compiled and Edited by the Secretary of the Convention Paper Pp 110 H M Whelpley M D, Secretary, 2342 Albion Place St Louis

THE PROBLEM OF RACE BETTERMENT By T Ewing Mears M D Cloth Price, 50 cents Pp 45. Philadelphia William J Dornan 1910

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV, No. 27 Chicago, Illinois December 31, 1910

ENTEROPTOSIS IN CHILDREN *

WILLIAM J. BUTLER, M.D.
CHICAGO

The term "enteroptosis," as commonly used, refers to a sinking of the abdominal viscera below their normal positions. Prior to Glénard's communication on this subject displacements of the abdominal organs had formed the subject of numerous contributions. Since that time the literature has grown to an enormous extent, but deals altogether with enteroptosis in the adult. Isolated reports of nephroptosis occurring in children are to be found in the literature, but apparently the subject in general has not received any consideration from pediatrists. Albu, however, included in a paper on enteroptosis a chapter on children. Thanks to the writings of Stiller, Mathes, Richard R. Smith, and others, it is now generally recognized by those interested in this work that the local displacements of the abdominal organs are manifestations of a general status to which the term "habitus enteroptoticus" is applied. This habitus may be recognized by virtue of a body-form characteristic of this class of individuals. It is regarded as a congenital and hereditary anomaly and not as an acquired defect.

If we accept this view of enteroptosis it is self-evident that we should be able to trace this habitus into childhood and even into infancy. An investigation as to the occurrence of this habitus in children is not only indicated but actually necessary for the establishment of the above conception. On the other hand, if it can be shown that this constitutional tendency is the result of conditions occurring subsequent to birth, such as nutritional diseases, etc., it may be possible through prophylactic measures to obviate its development. We occasionally see adults not presenting this habitus who are the subjects of enteroptosis due to bad hygiene, chiefly in child-bearing, but the enteroptosis never attains a high degree, in these cases, in contrast to the congenital type in which the displacements may attain the extreme. In this paper cases of the acquired type will be excluded.

It is necessary for us to have a clear conception of this body form which may be gained from the following description. It is the general make-up of the individual that decides whether he or she belongs to this group. While this habitus is more frequent in females it is often seen in males. Such individuals are slender, of frail bony structure, thin musculature and have little adipose tissue; the chest is long and narrow with small upper and lower apertures. Occasionally the chest is comparatively broad but very shallow. The lower ribs are more or less vertical in direction and the epigastric angle is narrow. The tenth rib may or may not fluctuate; a floating tenth rib is rare. The abdomen is usually flat with occasionally slight bulging below the umbilicus, while sometimes the lower part of the abdomen may be prominent. Becker and Lenhoff studied the body forms of a number of women in the hope of reducing the recognition of the habitus enteroptoticus to a mathematical certainty. As a result of their investigation they stated that if the jugulo-pubic index, obtained by dividing the jugulo-pubic measurement by that of the circumference of the chest at the waist line and multiplying the result by 100, equals or exceeds 77, the individual belongs to the enteroptotic group and will be found to have a palpable kidney. This index may be 77 or higher, but not infrequently it is below this figure. The lumbar lordosis is usually less marked than normal. The foot is more or less flattened. The individuals presenting such a picture will, in a large number of cases, present some evidence of visceral ptosis as well.

Stiller holds a fluctuating or floating tenth rib as a sign of hypoplasia of the thorax and considers an individual with such a rib as of the enteroptotic type which he also regards as synonymous with the habitus neurasthenicus. While we all recognize that many of the enteroptotic habit may present one or both of these stigmata, there are many people of the same type who do not show either one. There is no index or sign that is pathognomonic of this habitus. In fact, adherence to such points in the study of this subject interferes with a clear conception of it. In other words, as above stated, it is the whole makeup of the individual and no one point that decides the classification.

Before taking up the results of an inquiry into the occurrence of enteroptosis in children we should recall some points in the body form of the infant and also of the child up to puberty. We are all familiar with the large head, the short and not very thick neck, the short thorax and comparatively large lower aperture, the short middle zone of the trunk, and the large abdomen of the infant. When we examine the abdomen we invariably find the lower edge of the liver palpable, not infrequently extending close to the navel. The reasons for this are not to be sought alone in the relatively large size of the liver, but also in the comparatively short middle zone of the trunk. The middle zone is the space bounded above by the diaphragm and laterally by the costal arches. As the costal arches at this time are very short they do not cover well the organs of the upper part of the abdomen. The right kidney is frequently palpable practically throughout its whole extent, and occasionally the left is to be felt. It is impracticable to outline the stomach and colon satisfactorily unless we resort to the bismuth meal and x-ray, or distend the stomach with gas. The peculiarities mentioned may be found in the

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* Chairman's address in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

normal infant and therefore, cannot be looked on as evidence of enteroptosis.

In the growth and development of the infant's body, the middle zone increases in length so that the costal arch extends over the liver until the edge of the latter is felt at or a little below the border of the ribs. Later we are likewise unable to palpate the kidney, and what Albu refers to as enteroptosis of the new-born disappears by the normal growth and development of the infant. In the first months of life in a healthy, breast-fed infant we rarely see any suggestion of the enteroptotic habit. On the other hand, in the frail bodies of infants suffering from various degrees of malnutrition we often see many of its characteristics, to such an extent, in fact that one might think at this early time that one recognized in them the future subjects of enteroptosis. If it could be established that the enteroptotic habit had its foundation in periods of malnutrition which result from nutritional or other diseases, it would furnish us with important information as to the etiology; but I have not been able to establish this.

In older children conditions are somewhat different. Before discussing my results of the examination of the latter I wish to call attention to Stratz' observations on the growing periods of children. He enumerates four such periods: 1. A first period of fulness, from infancy up to the fifth year. 2. A first period of stretching out or elongation, extending from the fifth to the eighth year. 3. A second period of fulness, from the eighth to the eleventh year. 4. A second period of stretching out, from the eleventh to the fourteenth year. In the periods of fulness, the rounding out of the body predominates over the gain in height and *vice versa*, in the periods of stretching out, the gain in height predominates over the rounding out. In the course of my investigations into the existence of the habitus enteroptoticus and the displacements of the abdominal organs I examined from 300 to 400 children. The majority of them were healthy. A small number were dispensary patients with minor disorders. Accurate data were kept of only 155 children between the ages of 6 and 14 years. The history of each child as to past diseases, nutritional disturbances, etc., so far as practicable, was taken. Every child received a careful physical examination in which the following points were noted: Condition of nutrition, musculature, bony structure, especially with reference to spine and thorax, form and development of the latter, direction of the lower ribs, the epigastric angle, the mobility of the tenth rib, the jugulo-pubic and thoracic measurements, contour of the abdomen, pedal arch, etc. Thorough examination of the abdomen for organ displacements was

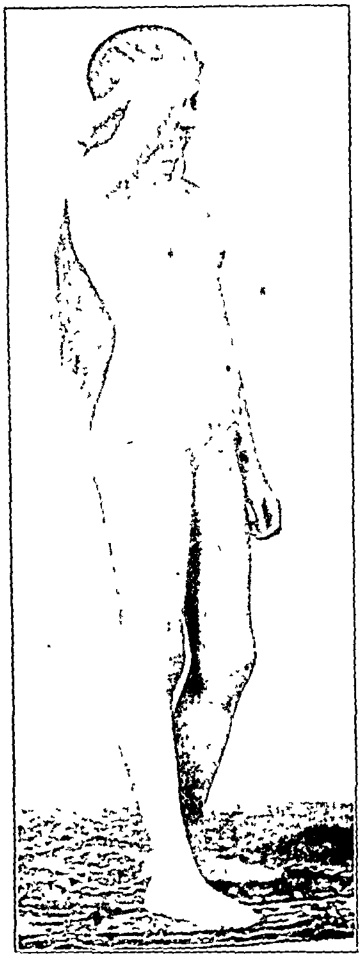

Fig. 1.

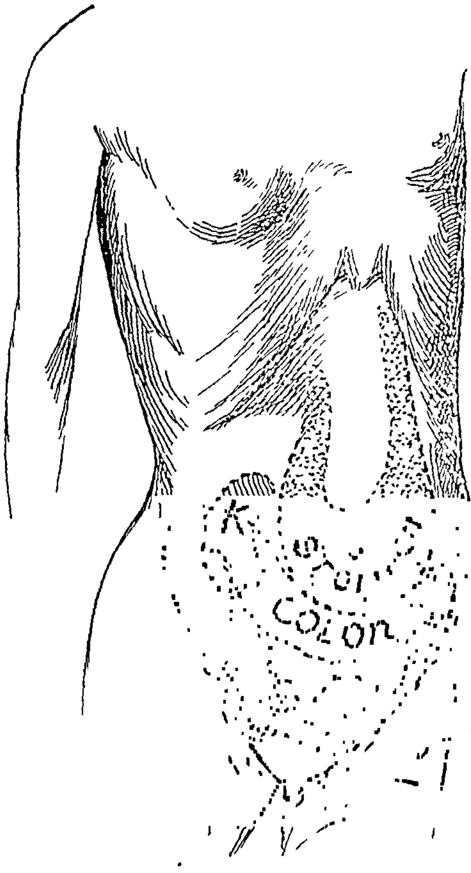

Fig. 3.

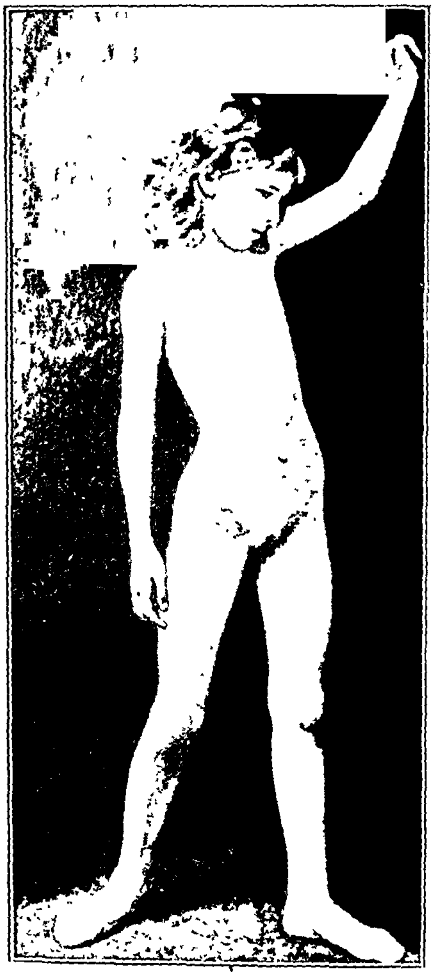

Fig. 2.

Fig. 1.—Well-developed girl of 12 years, representing what may be termed the normal type. (Photo from Stratz.)

Fig. 2.—Slender girl of 11 years, with long thorax and narrow epigastric angle, flat epigastric region, flat foot and slight bulging of the abdomen below the navel—a typical case of the enteroptotic habit. (Photo from Stratz.)

Fig. 3.—Diagrammatic representation of the enteroptotic habit and displacement of abdominal organs in a girl of 11 years.

made. The stomach of each child was inflated with carbon dioxid made by using sodium bicarbonate and tartaric acid. A simple means of determining the lower border of the distended stomach is to rub the hand quickly downward from the xiphoid cartilage. The difference in tension on leaving the stomach is immediately perceived. The line at which the change is noted will mark the lower border. Sometimes the outline of the distended stomach is evident on inspection.

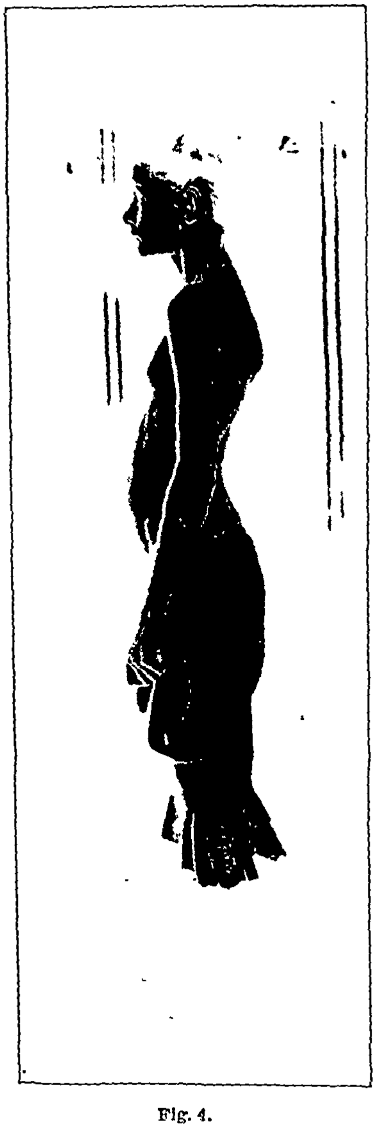
Fig. 4.

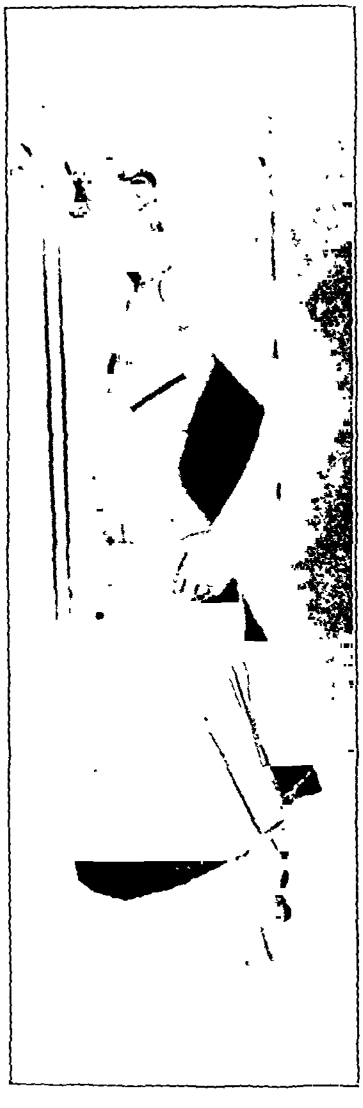
Fig. 5

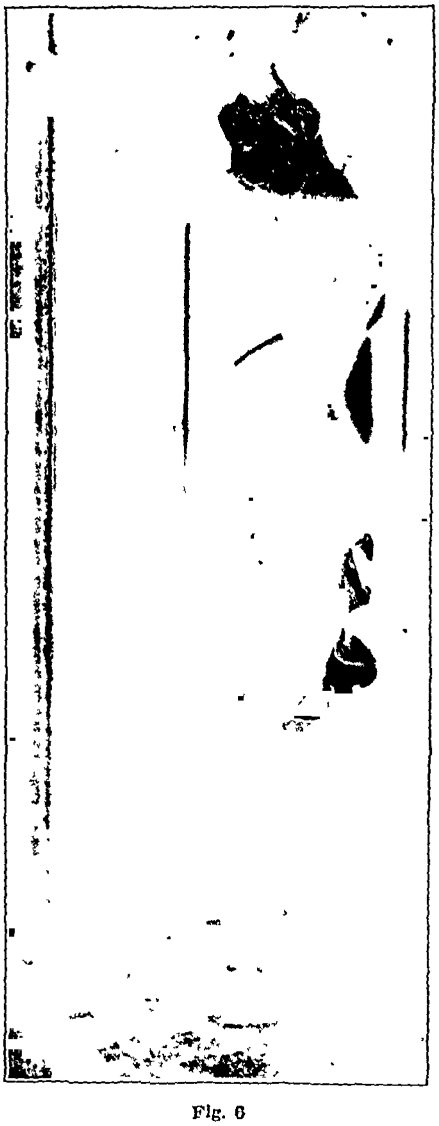
Fig. 6

Fig. 4.—Girl of 14 years presenting the enteroptotic habit. She has a marked gastroptosis, coloptosis and nephroptosis, and has neurasthenic symptoms.

Fig. 5.—Girl of 14 years, showing the enteroptotic habit, but without downward displacement of abdominal organs

Fig 6 —Girl of 12 years, lacking many of the characteristics of the enteroptotic habit, but having nephroptosis and neurasthenic symptoms

Early in this work it became evident that no one sign, such as a fluctuating tenth rib, a narrow epigastric angle, or a high index, could be depended on to decide the existence of the habitus enteroptoticus in a child at any age. Only by keeping in mind the general picture of this condition could a correct judgment be reached. Fully 50 per cent. of all children have a movable tenth rib. It is rarely found unattached to the costal arch so as to deserve the designation floating. Some children with a narrow chest, a sharp epigastric angle, and a typical habitus asthenicus, have a firmly fixed tenth rib. A broad epigastric angle is frequently found in children as the result of flaring of the ribs due to an early rachitis, and yet children with such an angle may present the general make-up of this habitus. The above description of the habitus enteroptoticus as seen in the adult is not often seen in its entirety in very young children; yet we often see, even in the first years of life, children of such frail structures and atonic condition that they might be properly grouped in this class. On the other hand, in late childhood, corresponding to the second elongation period of Stratz, at the approach of and with the development of puberty, fully one-third of the females and about one-sixth of the males exhibit the characteristic habitus enteroptoticus.

The following are results of the examination of 155 children, 50 girls and 105 boys: The edge of the liver was palpable in the nipple line in 35 of the girls either at the border of the ribs or one or two finger's breadths below it on inspiration. The same condition was found in 82 boys. The right kidney was dislocated downward in three girls, in one of whom it was also displaced forward and palpable throughout. In six others the lower pole of the right kidney was palpable on deep inspiration. In one boy the right kidney was dislocated and palpable throughout its extent. In five others the lower pole of the right kidney only was palpable on deep inspiration. In 40 per cent. of the children examined the lower border of the stomach distended with gas extended to or within a half inch of the umbilicus. The position of the stomach was determined in several girls by means of the *x*-ray, a bismuth meal being given and a skiagraph taken immediately afterward. Three of the girls, two of whom had a dislocated right kidney and one a right kidney palpable for half its extent, showed the lower border of the stomach below the umbilicus. The ages of the first two were respectively 14 and 12 years and that of the third 12 years. In the vast majority of children throughout infancy and childhood the edge of the liver can be palpated in inspiration at or below the costal arch; and even when it is felt the width of two or three fingers below the costal arch we are not justified in assuming hepatoptosis. It will be noted that in three girls and in only one boy a right-sided nephroptosis was found. These children were 12 or more years of age. In several children of all ages the lower pole of the right kidney was apparently palpable on deep inspiration. Too great stress must not be laid on this fact, for on account of the difficulty of the examination the possibility of error is considerable. In no case was the left kidney palpable. In the three girls above mentioned the habitus enteroptoticus, as well as the displacement of the abdominal organs, was well marked.

During my examination of the children I inquired as far as practicable into the condition of their nutrition during infancy and early childhood with the view of learning if possible whether disturbances of nutrition might have some bearing on their future development. It seems quite possible that infants who suffer from malnutrition, marasmus, rachitis, etc., may undergo a greater or less degree of underdevelopment in all tissues and that they may ultimately rank in the enteroptosis class. Likewise prolonged periods of low nutrition at any stage of child life might form a foundation for the development of this abnormality. For reasons quite apparent an accurate history of the conditions in early childhood was seldom obtainable. On account of the unsatisfactory results of this inquiry a close relation between early nutritional disease and the enteroptotic habit could not be clearly made out in many instances. We usually find, however, that the older chidren in whom this condition is present have always been undernourished and present a greater or less degree of underdevelopment.

From my own observations I am convinced that the evidences of the enteroptotic habit are observable throughout childhood, but in more pronounced form in late childhood approaching and in the period of puberty. In the first days of life palpable kidneys and liver are not to be regarded as signs of enteroptosis as these findings are common at this period of life. Beyond the first year and up to late childhood palpable kidneys and displaced stomachs are exceptional although signs of this habitus were evident in some of the children examined. On the other hand, coinciding with the development of the adult type of this habitus with the approach and in the period of puberty the displacement of the abdominal viscera become less exceptional: in fact, the actual ptoses, I believe, are practically first seen at the period of puberty.

72 Madison Street.

THE APPROXIMATION OF WIDELY SEPARATED WOUND MARGINS

JOSEPH RILUS EASTMAN, M.D.
INDIANAPOLIS

In the closure of wounds, the margins of which are widely separated, as in those in which there is an extensive skin defect, sutures which will bring together the wound edges, or skin margins, and hold them coapted, resisting the sometimes unavoidable tension without cutting out, are obviously helpful.

For the purpose of relaxing the tissues immediately along the wound margin heavy interrupted sutures are usually passed at a distance of one inch or more from the wound line on each side, and these, to some extent, take the strain from the coaptation sutures.

Such relaxation sutures, however, do not differ essentially from the coaptation sutures applied closely along the wound margin. Their slight advantage consists in the fact that they are usually of heavier material and, passing through the skin at a greater distance from the wound, the likelihood of their cutting out is lessened, since they may cut for a considerable distance without splitting the skin quite to the wound edge.

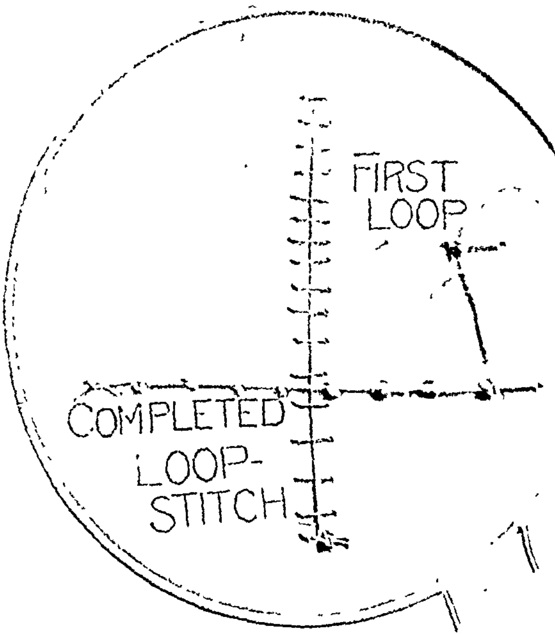

Fig. 1.—Manikin to show running loop relaxation suture crossing breast amputation wound line. Tension is on ten points instead of two.

Such relaxation sutures, while they doubtless possess some value, are often unsatisfactory if the retraction on the edges of the wound be great.

The ingenious running suture employed by Charles Mayo after breast amputations, in which the wound margins must be brought together under tension, is at once a coaptation and a relaxation suture. The manner of its application and its usefulness are well known.

This continuous suture is open to the objections applying to other continuous sutures. If the continuous suture breaks at any point the wound margins must fall apart, unless the closure is otherwise reinforced. Here dependence is placed on a single strand. Infection, if it should occur, tends to travel along a continuous suture. These perhaps somewhat captious objections do not apply so clearly to interrupted sutures.

By most surgeons it is felt that accurate approximation of wound edges, particularly after operations for malignant disease, is very desirable. Until more is known of the origin and nature of cancer, the lurking possibilities of a granulating surface with its embryonal cell elements will occasion uneasiness until healed over. Even skin grafts with their active cell proliferation can hardly have the confidence which is given to normal skin. The practice of approximating the wound edges by separating the skin from its attachments over a large area with consequent diminution of blood-supply is not infrequently followed by sloughing, which greatly increases the difficulties which militate against primary covering of the defect.

Clearly it should be the maxim of every surgeon to have no thought of the covering of the defect while engaged in the radical removal of every vestige of malignant or suspected tissue. The manner of repairing the defect is a matter of no importance until the operation proper is complete. When a thorough operation, however, has been completed, at least a part of the defect can always be covered by precise coaptation of wound margins without unsafe tension.

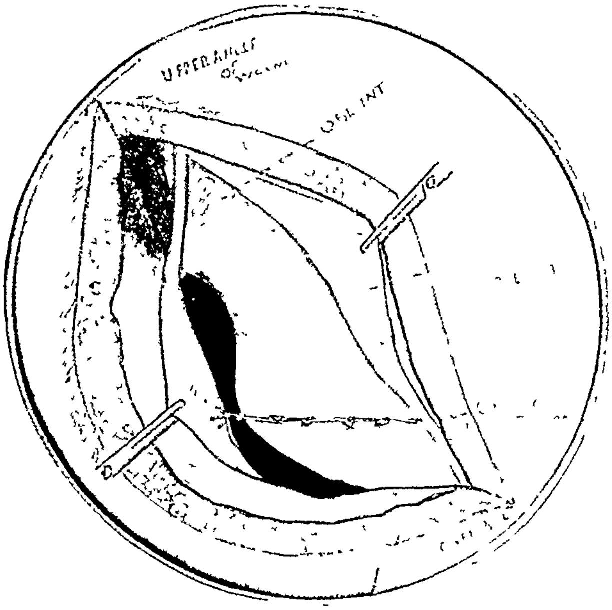

Fig. 2.—Manikin showing use of running loop relaxation suture in drawing the obliquus internus and transversalis and conjoined tendon to Poupart's ligament in wide inguinal hernias, likelihood of splitting being lessened by distribution of tension over several points.

The running-loop suture shown in Figure 1 holds the margins together more firmly than any relaxation suture with which I am familiar; moreover, it will not cut out unless the pull be very great indeed, for here the tension is distributed over many points instead of two, as in the case of the ordinary relaxation sutures. In the case of the running-loop suture shown on the manikin in Figure 1 there are ten loops; therefore the tension is divided among ten points, and if several sutures of this character be used to reinforce the coaptation sutures, the wound margins, for example after a breast amputation, may be brought together under tension without subsequent separation and without cutting out of the sutures.

In breast surgery these relaxation sutures can be applied best after the wound edges have been coapted in the customary manner. They are introduced in much the same manner as a seamstress introduces the "chain-stitch," but differ from the chain stitch in that each loop is secured by a "hard" knot before the next loop is taken.

Beginning about two and one-half inches from the wound margin the needle is passed under the skin in the direction of the wound edge and brought out about 1 cm. nearer the wound edge than it entered. The long suture is drawn through to a point near its middle and tied with a reef or hard knot, as if one were tying off a blood-vessel, the knot falling over the aperture of exit or the opening nearer the wound line. In other words, the suture is passed under the skin for 1 cm. and both ends are tied over the opening next to the wound. The needle is then passed back through the hole under the knot for the second loop and the long ends are tied again over the opening at which the needle emerges. The loops are carried across the wound line and as many are taken on the opposite side as the tension which is to be overcome makes necessary.

It is my practice to apply several such chain sutures after breast amputations if there is considerable traction on the coaptation sutures. Three, about one inch apart, placed where the traction is usually greatest, that is, near the middle of the wound line, usually suffice.

This chain suture may be utilized in drawing the internal oblique and transversalis muscles to Poupart's ligament in cases of very wide inguinal hernia. Likewise the conjoined tendon may be drawn and held to Poupart's ligament if several loops of the chain-stitch be applied across it. Wheras an ordinary suture in hernia with wide separation often simply splits off a narrow ribbon from the edge where the needle perforates the internal oblique and transversalis muscles, the chain suture will pull over the whole muscle mass without injury.

The splitting of the conjoined tendon for the purpose of relaxation, and the division of the rectus sheath with or without transplantation of the belly of the rectus, while they are helpful practices in some cases, may be dispensed with often, if the chain suture here described be used.

331 North Delaware Street.

TUMOR OF THE SPINAL CORD

HERBERT C. MOFFITT, M.D., AND HARRY M. SHERMAN, M.D.

SAN FRANCISCO

Although the literature on spinal tumors has been enriched by numbers of excellent observations in the past three or four years, it is still worth while to record carefully studied cases.

REPORT OF CASE

History.—A woman aged 33, a native of Scotland, entered the University of California Hospital Feb. 2, 1910. She had been very delicate as a child but since then unusually well, apart from frequent attacks of tonsillitis. Three years previously she was thrown from a buggy and fell on her back but was not confined to bed and had no pain afterward. The present trouble began in October, 1908, when she would be awakened regularly about 4 a. m. with pain across the back, just above the level of the iliac crests. This was not very severe, did not radiate and disappeared as soon as she got out of bed. About the beginning of 1909 the pain disappeared and she felt very well until one day in spring—about March—she jumped down three feet from a porch. Right after this the pain in the back returned and she began to have pain in the lower abdomen, on both sides alike, running diagonally downward from the rib border to the pubes. This pain was not severe and disappeared in a few weeks. In July, 1909, she noticed lameness and stiffness in the left leg. Disturbance of sensation was not noted, but, after a fall, painless ulcers developed below the left knee and were weeks in healing. Both legs were awkward and she fell frequently, finding it difficult to keep her balance. After taking electrical treatment in October, 1909, there had been frequent incontinence of urine and feces. Since November there had been rapidly increasing weakness and stiffness of the left leg and frequent pain down the front of the left thigh. Weakness and rigidity of the right leg had been noted only a week before entrance and walking had become almost impossible. The patient's family history was excellent. There was nothing to suggest syphilis.

Examination.—The important nervous signs were as follows:

1. An ataxic paraplegia that on entrance rendered standing or walking very difficult and two weeks later impossible. Rigidity and ataxia interfered with walking more than loss of power; there never was complete loss of power in any muscle-groups, though the left lower extremity was much weaker than the right. Rigidity was much greater on the left; there was bilateral pes equinus, more pronounced on the left.

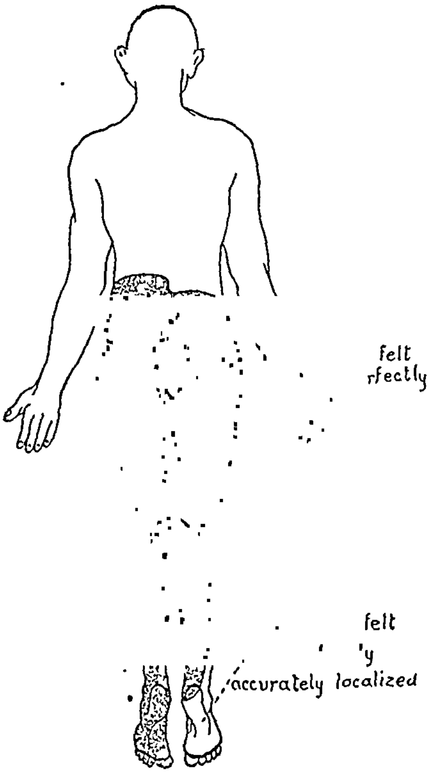

Fig. 1.—Diagram of modifications in sensation, posteriorly; dark portion represents anesthetic area

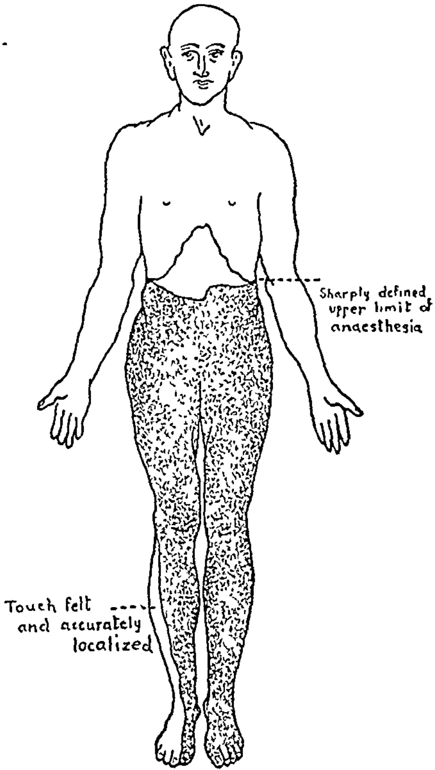
Sharply defined upper limit of anaesthesia
Touch felt and accurately localized

Fig. 2.—Diagram of modifications in sensation anteriorly.

2. Sensation varied somewhat during the three weeks of observation and the chart represents the final examination of sensation to touch just before the operation. There was absolute loss of pressure sense, sense of position and of passive movement in the entire left lower extremity and in the right foot and leg. Analgesia and loss of temperature-sense followed accurately the distribution of anesthesia except toward the upper limit; in the zone between the umbilicus and the pubes the loss was not complete and, as has been noted by others, anesthesia gave much more accurate information as to the level of the lesion.

3. Reflexes in the lower extremities were much increased, although rigidity interfered with the demonstration of clonus. The Babinski and Oppenheim phenomena were present on both sides. The upper abdominal reflexes were present, the reflex on the right being much livelier than on the left. The lower abdominal reflexes were not obtained. The umbilicus was in the median line. The muscles on the left side just above and below the umbilical level reacted decidedly less to the faradic current than on the right. There was occasional incontinence of urine.

4. There was moderate tenderness of the ninth, tenth, eleventh and twelfth dorsal vertebræ at times, and the spine in this region was slightly rigid. On sitting there was a slight scoliosis with convexity toward the left in the lower dorsal spine but this disappeared on standing.

5. Trophic changes were limited to the old scars below the left knee, and to a decided edema of both legs. Any movement caused sudden shooting pains down the anterior part of the thigh and leg, and severe pain occurred at times beneath the left costal arch and in the left groin.

The Wassermann reaction was negative. On February 12 hypodermic injection of 2 mg. of old tuberculin was followed in twelve hours by a typical rise of temperature, general malaise and decided increase of tenderness and pain in the back.

Diagnosis.—The level of the lesion in the cord could readily be deduced from the characteristic sensory changes. Following Sherrington's teaching, it is to be remembered that complete loss of *common sensation in the ninth* dorsal segment must mean involvement of the eighth dorsal segment as well. It is not here the place to go into the differential diagnosis of the lesion. The onset with nerve-root pain, the gradual development of paraplegia, the predominance of the symptoms on the left side, the early and marked ataxia led to the diagnosis of an intraspinal tumor or a localized meningitis rather than vertebral disease. Despite the general and local symptoms following the injection of tuberculin, the absence of definite vertebral changes spoke strongly against a tuberculous process, and the reaction was referred to slight signs of old thickening at the left apex. Oppenheim has recently emphasized the necessity of caution in judging that a nerve lesion is tuberculous simply from a pronounced tuberculin reaction.

In the absence of any results after three weeks' treatment with the large doses of mercury and iodid, the patient was referred to Dr. Sherman with the advice to cut down on the cord opposite the sixth dorsal spine. From the mode of onset the tumor would probably lie on the left posterior part of the cord. The following is Dr. Sherman's account of the operation:

Operation and Course.—"The relatively brief examination I made of the patient led me to the conclusion arrived at by Dr. Moffitt and I wholly agreed in the opinion that the spinal canal should be opened. I did, therefore, a simple laminectomy to the exclusion of an osteoplastic operation. The simple operation preserves the continuity of the erector spinæ muscles, an important point in the convex curve of the dorsal spine, as it is a safeguard against consequent kyphosis, which might easily follow the cross-section of the muscles and the loss of their motor nerves, both of which are necessitated in the osteoplastic method. As much as possible of the periosteum of the laminæ was preserved, but the patient was a stout woman, the spinal muscles were massive and lay beneath a thick fatty panniculus, so that the detailed scraping of the periosteum from each lamina was physically difficult. The laminæ and spinous processes were removed from the sixth, seventh, eighth and ninth vertebræ. This exposed the dura, and as it did not pulsate and it seemed likely that more room might be needed, the lamina and spine of the fifth vertebra also were removed. The dura was tense but opposite the sixth body a mass was felt and could now be seen. When the dura was incised there was folded back with the left half a small tumor 1.5 cm. by 0.75 cm. adherent to the dura. The cord was at this point dislocated slightly to the right, so that it made a little curve in its course, but the surface showed no indentation from the pressure of the tumor. The tumor was readily detached from the dura, the little hemorrhage which followed stopping easily on a little pressure. When the cord itself was exposed it was seen to be pulsating normally, the hypertension of the cerebrospinal fluid probably having obscured the pulsation in the intact dura.

"After the removal of the tumor the dura was caught together with three catgut sutures, the muscles were sutured together across the median line over it and the skin sutured. The patient was put into a dorsal semi-jacket of plaster of Paris so padded that no pressure could come on the suture line.

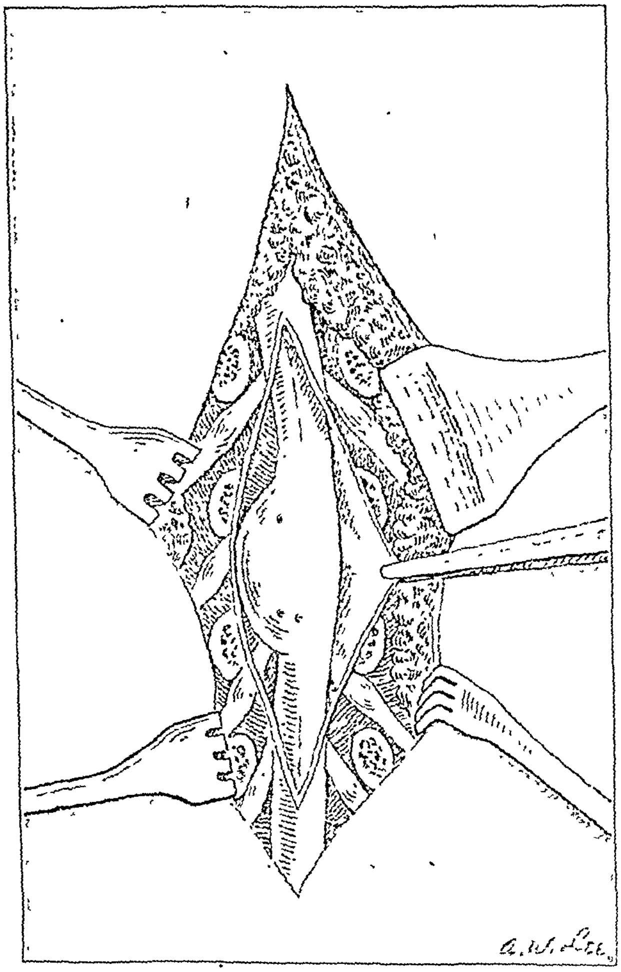

Fig. 3.—Tumor of spinal cord (small spindle-cell sarcoma) opposite sixth dorsal vertebra.

"Healing was normal. On the twenty-fifth day the patient sat up in bed; on the twenty-seventh day she was up in a wheel chair and on the thirty-first day she walked.

"In the pia mater were seen three small, flat, white specks, 2 to 3 mm. in diameter; these were clipped out and sent to the laboratory with the tumor."

Macroscopic Examination of Specimen.—Dr. A. W. Lee returned the following report: "The tumor was oval in shape with one end slightly pointed. It measured about 2 by 1 cm., was of whitish-pink color, rather firm to the touch and showed on gross section a somewhat bulging cut surface that presented an intricate pattern of small whorls. Weight 1,600 mg. The bodies from the pia mater were grayish-white in color, irregular in shape, firm to the touch and measured approximately 2 by 2 mm. Some pieces of tumor were fixed in alcohol, others in Orth's fluid; the same fixation methods were employed with the bodies from the pia. The preparations were sectioned in celloidin and stained with hematoxylin and eosin."

Microscopic Findings.—"The major portion of the tumor consists of small spindle-cells arranged in whorls. Here and there, however, irregular groups of round-cells appear. Both of these cellular elements show nuclei of a light staining index and but little protoplasm. Occasionally mitotic figures are found among them. Most of the larger blood-vessels are involved to an extreme degree in hyaline degeneration, and in a few areas hyalomyxomatous changes are found irrespective of the blood-vessels. Small interstitial hemorrhages occur but do not form a prominent feature of the picture. The small bodies from the pia consist of ramifying columns of hyaline tissue which histologically do not seem to bear any direct relationship to the tumor: Small spindle-cell sarcoma."

Post-Operative History.—The day following operation sensation to touch had returned to a considerable extent in both limbs and the patient could localize a touch fairly well. Two days later rigidity was much less and the knee-jerks and ankle-jerks were not much increased. A Babinski was obtained on the left but not on the right side. Movements of the toes were correctly interpreted. It was interesting at this time to note that pain and heat and cold were felt much better on the left than on the right side. All movements could be executed with fair strength. Edema quickly disappeared. Bladder control was soon established. During the first month after operation signs varied considerably; the improvement was not steady but marked by retrogressions in which sensation below the knees would be less acute and weakness of both extremities often quite decided. Gradually such periods became less frequent and less marked and the patient was able to stand and walk on the thirty-first day. For a few weeks the gait was decidedly ataxic paraplegic, and there was complaint of stiffness and soreness in the lower dorsal and lumbar spine.

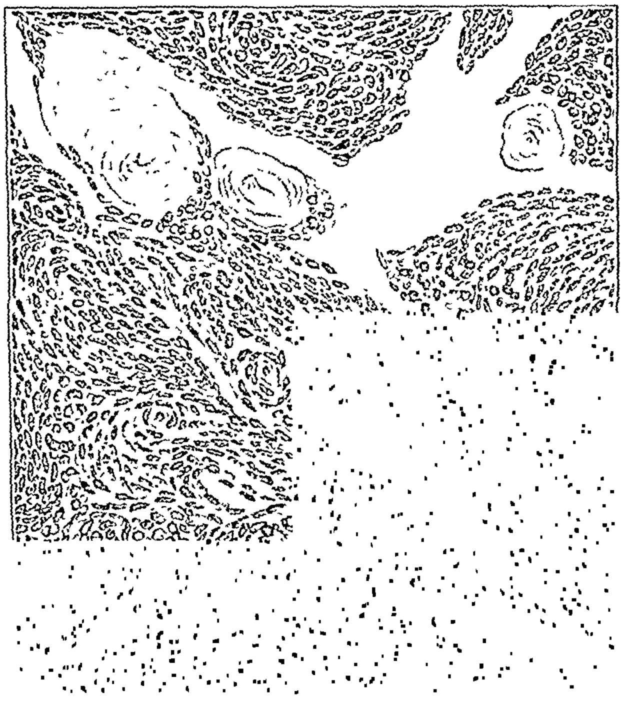

Fig 4.—Histologic structure of tumor, consisting of small spindle-cells arranged in whorls, with irregular groups of round-cells. The blood-vessels show hyaline and myxomatous degeneration.

When seen last, Sept. 2, 1910, the patient felt perfectly well, had no difficulty in walking, no weakness, no pain or paresthesias. The knee-jerks were moderately increased, and sensation, superficial and deep, was entirely normal.

240 Stockton Street.

interruption of the blood-supply of the kidney has on its parenchyma.

Our investigation was undertaken to observe how long the circulation through the renal vessels can be completely obstructed, without causing permanent degenerative changes in the kidney. This question is not only of interest to the pathologist, but is of even greater importance to those surgeons who believe in employing one of the various methods of compressing the renal vessels to control hemorrhage during operations like nephrotomy, for the removal of calculi, etc. It is beyond the scope of this paper to discuss which particular method of compression is preferable clinically, whether by clamp, rubber ligature or the fingers.

2. HISTORY

A review of the literature shows that but little work on this subject has been reported, since Litten[3] published his exhaustive article on hemorrhagic infarct in 1880. His observations and deductions will be referred to later. He found that ligation of one and a half to two hours was enough to show all changes, and that these changes are only more intensive but not greater in extent if the ligature is left on longer, i. e., three or four hours.

A considerable amount of experimental work has been done during the past ten years to study the effect of permanent ligation, first, of both renal artery and vein;[4, 5] second, of these vessels separately,[4] and, third, of the ureter.[6] It is now generally accepted that these three varieties of permanent ligation cause necrosis with secondary atrophy of the kidney; hence it will be unnecessary to consider the various articles which deal with permanent ligation, since the object of our experiments was simply to determine the effect of temporary anemia.

Beattie and Dickson[7] state that, since the appearance of Litten's paper, similar experiments on permanent ligation of the renal artery were repeated by George Mackay, in Berlin, and the specimens were examined by Professor Greenfield, and that, more recently, one of the writers closely observed an extended series of similar experiments and observations conducted by Dr. Duncan Forbes, in the Pathological Department of the University of Edinburgh, under the direction of Professor Greenfield. Although these experiments dealt with permanent ligation, the animals were killed at varying periods after the application of the ligature, some almost immediately after ligation, others two hours after the ligature was applied. Dr. Forbes' findings, two hours after the ligature was applied, agree with our findings in a similar experiment.

A few observations have been made on the effects of temporary obstruction of the renal veins by Carrel.[8] Guthrie[9] reports one experiment in which the arterial circulation was restrained for nearly ten minutes. He found that this short temporary anemia alone (that is, without perfusion) caused no marked alterations. Aside from this work of Guthrie and that of Litten, we have been unable to find any experiments similar to those reported in this paper.

3. PLAN OF PROCEDURE AND TECHNIC

1. In order to study the permanent effects of temporary compression of the renal vessels the problem was attacked in the following manner: Five experiments were performed, the renal vessels being clamped for fifteen, thirty, forty-five, sixty and ninety minutes, respectively. At the end of this time the clamp was removed, allowing the circulation to be reestablished, as would be the case clinically, after nephrotomy. Rabbits of average size were used and the left renal vessels compressed in all of the experiments. Ether was used as an anesthetic.

The kidney was brought up into a median incision in the abdominal wall and the renal vessels were isolated and compressed with a rubber-covered clamp or serrefine. In every experiment the portion of artery between the clamp and the kidney was palpated, to be sure there was no pulsation, that is, that the obstruction was complete. In several cases a second clamp was applied, to be more certain that the obstruction was complete. The kidney and pedicle, with the clamp applied, were then returned to the left side of the abdomen, as near its original position as possible, and the peritoneal cavity temporarily closed by apposing the peritoneal edges. The clamp was allowed to remain on the vessels for variable periods: in Experiment 1, for fifteen minutes; in Experiment 2, for thirty minutes; in Experiment 3, for forty-five minutes; in Experiment 4, for sixty minutes; in Experiment 5, for ninety minutes. Four weeks after each one of these experiments the animal was killed with ether, and both kidneys were removed for histologic study and immediately placed in fixing solutions.

2. In order to study the immediate changes produced two experiments were performed. In one experiment the vessels were compressed for two hours, and at the end of this time the kidney was removed and histologic sections made at once. In the second the vessels were compressed for two hours and the kidney removed forty-eight hours after the operation.

4. CLINICAL RESULTS

No attempt was made to note the immediate and later effects of these experiments on the secretion of urine, either as to composition or amount. Only the resulting histologic changes were studied. In general, the animals appeared normal after the operation.

5. ANATOMIC RESULTS

I. GROSS EXAMINATIONS

After the clamp had been applied for the required length of time, and when the kidney was exposed to remove the clamp, the kidney was seen to be congested and cyanotic, and was larger than normal. In the experiments, in which compression lasted an hour and a half and two hours, these changes were especially marked, the kidney being dark blue and greatly increased in size.

When the kidneys were examined four weeks after the compression, they appeared quite different. In the experiment of compression for an hour and a half, the left (compressed) kidney was seen to be distinctly smaller than the right, and was much paler in color, that is, the kidney was atrophic and showed macroscopic evidence of marked parenchymatous degeneration. The cut surface showed that this parenchymatous degeneration was especially of the cortex. In the experiments in which the compression had been less than one hour and a half, there

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[3] Litten: Ztschr. f. klin. Med., 1880, i.

[4] Jaboulay: Lyon médical., 1906, cvii.

[5] Jungano: Ann. d. mal. d. org. génito-urin., xxiv; Alessandri: Quoted by Jungano.

[6] Jaboulay: Lyon médical, 1903; Gayet: Ann. d. mal. d. org. génito-urin., xxii.

[7] Beattie and Dickson: General Pathology, 1908, p. 165.

[8] Carrel: Compt. rend. Soc. de biol., 1909, lxvi.

[9] Guthrie, C. C.: The Effect on the Kidneys of Temporary Anemia, Alone and Accompanied by Perfusion, Arch. Int. Med., 1910, v, 232.

THE EFFECT ON THE KIDNEY OF TEMPORARY COMPRESSION OF ITS VESSELS *

D. N. EISENDRATH, M.D., AND D. C. STRAUSS, M.D.
CHICAGO

1. PURPOSE

Considerable difference of opinion exists among surgeons in regard to the advisability of compressing the renal vessels to control hemorrhage during nephrotomy. Some maintain that in addition to the temporary functional disturbance,[1, 2] which often follows such compression, the anemia so produced causes serious and permanent degenerative changes of the parenchyma. At a recent meeting of the Chicago Urological Society Dr. A. D. Bevan stated that it would be of considerable interest to observe experimentally what effect such temporary

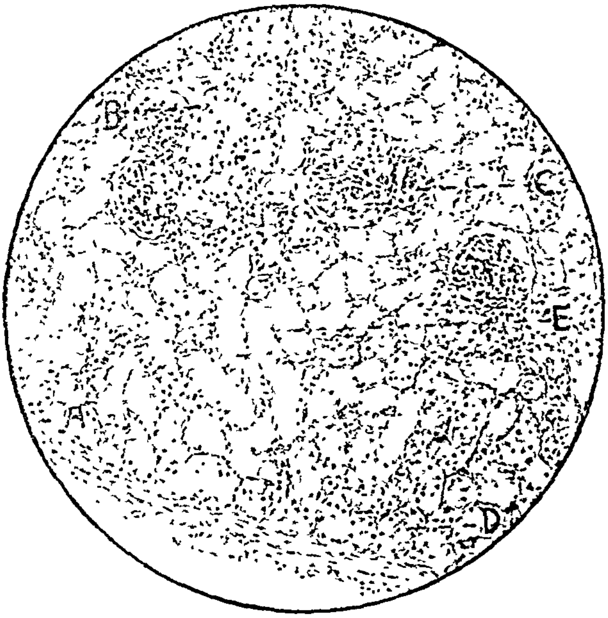

Fig 1.—Section from kidney removed forty-eight hours after two-hour compression of renal vessels (×110). Note the extensive, total coagulation necrosis of the tubular epithelium. Glomerulæ are normal and intact. Interstitial tissue is practically normal except for a few focal hemorrhages not yet absorbed (a) beneath capsule (b) in cortex between the tubules. Some scattered tubules are intact; c, intact tubule showing lumen filled with a hyaline cast; d, tubule showing epithelium partially destroyed but lumen still preserved, but filled with hyaline cast; e, tubule showing total necrosis of the epithelium, which is hyaline and swollen, completely obliterating the lumen.

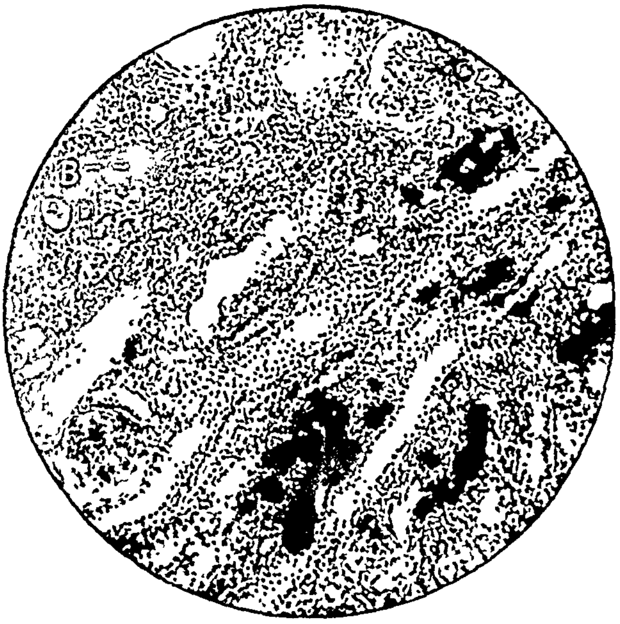

Fig 2.—Section from kidney removed four weeks after 1-hour compression of renal vessels (×110.—Zeiss). Note extensive calcification of tubular epithelium; that this is entirely intratubular; that the glomerulæ, interstitial tissue, and blood vessels remain calcium-free. Calcium deposit (a) in degenerated epithelium is peripherally located, leaving an open lumen; (b) later stage—calcium deposit completely fills tube to form solid plug; c, normal glomerulus; d, hyaline cast in tubule whose epithelium is flattened. Note extensive round-cell interstitial infiltration and parenchymatous degeneration.

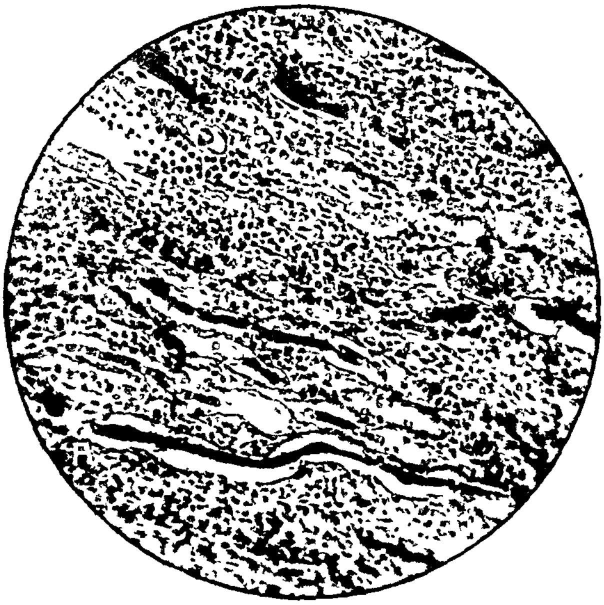

Fig 3.—Section from kidney removed four weeks after 1½-hour compression of renal vessels (×170.—Zeiss). Note extensive deposition of calcium in tubuli recti; a, cylinder of calcium in straight tubule whose epithelium is destroyed. The space between the calcium deposit and the interstitial tissue is due to shrinkage of the tissue in fixing. Note also the extensive round cell interstitial infiltration. A few polynuclear leukocytes can also be seen.

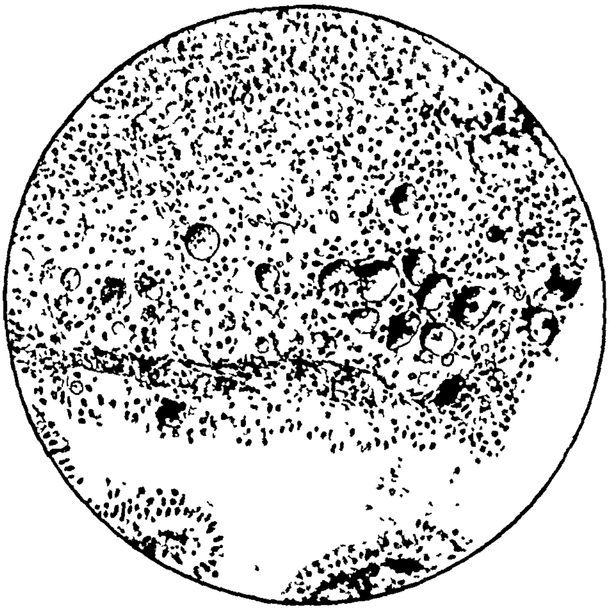

Fig 4.—Section of kidney removed four weeks after 1½-hour compression of renal vessels (×170.—Zeiss). Note peripheral deposit of calcium within excretory tubules, seen in cross section. Note also the marked decrease of interstitial infiltration in this section at the papilla, as compared with that in the region of the tubuli recti (Figure 3).

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* From the Laboratory of Pathology, Michael Reese Hospital, Chicago; read in the Section on Pathology and Physiology of the American Medical Association, St. Louis, June, 1910.

[1] Schmidt, L. E.: Tr. Am. Assn. Genito-Urinary Surgeons, 1909, p. 224.

[2] Cunningham, John H., Jr.: Tr. Am. Assn. Genito-Urinary Surgeons

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[3] Litten: Ztschr. f. klin. Med., 1880, i.
[4] Jaboulay: Lyon médical., 1906, cvii.
[5] Jungano: Ann. d. mal. d. org. génito-urin., xxiv; Alessandri: Quoted by Jungano.
[6] Jaboulay: Lyon médical, 1903; Gayet: Ann. d. mal. d. org. génito-urin., xxii.
[7] Beattie and Dickson: General Pathology, 1908, p. 165.
[8] Carrel: Compt. rend. Soc. de biol., 1909, lxvi.
[9] Guthrie, C. C.: The Effect on the Kidneys of Temporary Anemia, Alone and Accompanied by Perfusion, Arch. Int. Med., 1910, v, 232.

The cut surface of the kidney which was removed immediately after the two-hour compression showed marked congestion. The cut surface of the kidney which was removed forty-eight hours after the two-hour compression of the renal vessels, also appeared somewhat congested, but this was much less marked.

II. MICROSCOPIC EXAMINATION

For this part of the work we are greatly indebted to Dr. J. W. Jobling, who was kind enough to look over the histologic sections with us.

A. IMMEDIATE CHANGES

1. Two-Hour Compression; Kidney Removed at Once.—Sections from the kidney which was removed immediately after two-hour compression show hemorrhage just beneath and within the capsule, elevating the capsule, and separating its layers. There are numerous focal hemorrhages in the medulla, especially between the tubules near the pelvis. It may be noted that the hemorrhage is from the capillaries which are nearest the collateral blood-supply (that is, ureteral artery to pelvis, and capsular arteries from the lumbar arteries). The glomerular tufts are distended, and the intertubular capillaries are generally greatly distended. The tubular epithelium shows very little change, and the nuclei stain well. In some cases, red blood-cells can be seen in the glomerular space, and *in the tubuli recti.*

2. Two-Hour Compression; Kidney Removed After Forty-Eight Hours.—Sections from this experiment (Fig. 1.) show that the focal hemorrhages which were seen immediately after the two-hour compression have been absorbed to a large extent. Most of the red blood-cells have disappeared from the capsule also. The striking feature in these sections is the marked necrosis of the tubular epithelium. The tubular epithelium, especially of the cortex, is almost entirely destroyed, showing total coagulation necrosis; the nuclei are gone for the most part, the individual cell outlines cannot be made out, and the cells are greatly swollen, so that the epithelium obliterates the lumen in many places, and gives the tubules the appearance of hyaline bands or casts. This total necrosis of the epithelium is very marked in the cortex and decreases in intensity toward the papillæ, where there is practically no change of the epithelial lining, but hyaline blood casts are often seen in the lumen. Although this necrosis of the epithelium is very general, some tubules, in patches, escape, some partially, others almost entirely. Where the tubules are normal, or where a lumen remains, the lumen contains either a serous exudate, or, as a rule, hyaline or blood-casts. These completely fill the lumen, plugging them. The excretory tubules in the medulla contain hyaline and blood-casts, which obstruct their lumen. These are striking. There is but very little interstitial infiltration. The glomeruli appear normal.

B. LATER CHANGES

Four weeks after temporary compression the right kidney, whose vessels had not been compressed, showed no changes, with the exception of a slight amount of round-celled infiltration in some of the cases, and occasional slight parenchymatous changes, as one finds in rabbits generally.

Certain changes were common to all of the left (compressed pedicle) kidneys, such as thickening of the capsule and slight perirenal adhesions.

Experiment 1.—Fifteen-Minute Compression.—Sections from this kidney (left) show only a slight degree of parenchymatous degeneration and isolated foci of round-celled infiltration.

Experiment 2.—Thirty-Minute Compression.—The round-celled infiltration is more marked than in the kidney of fifteen-minute compression. It is focal and rather unequally distributed through the kidney, some sections showing little infiltration, while others show more. There are distinct, but not very advanced signs of parenchymatous degeneration.

Experiment 3. — Forty-Five-Minute Compression. — The round-celled infiltration is much more marked than in the thirty-minute kidney. It is most evident in the cortical portion, but quite extensive throughout the kidney, diminishing toward the papillæ. The parenchymatous degeneration of the renal epithelium is also more marked than in the thirty-minute compression. The cytoplasm everywhere stains poorly. Some tubules contain hyaline and finely granular casts. There are some evidences of increase in the interstitial connective tissue. In this kidney we see, for the first time, slight traces of calcification, beginning in the most markedly degenerated tubules. These are rather indefinite.

Experiment 4.—One-Hour Compression.—(Fig. 2).—In addition to the round-celled infiltration and more marked parenchymatous degeneration, as compared with the kidneys compressed for thirty and forty-five-minutes, the most important feature of the sections of this one-hour kidney is the striking increase in the calcium deposits in those tubules which, in the kidneys of Experiments 2 and 3, compression for thirty and forty-five minutes had shown the most advanced degenerative changes. In the forty-five-minute kidney, there were only suggestions of calcium deposition, while in this one-hour kidney the calcium deposits were so evident *that they could be seen in the sections with the naked eye.* The lime salts are limited to the tubules, being deposited within and about the degenerated epithelium, leaving an open lumen.

Litten has explained this calcium deposition in the following manner: After the degenerated cells undergo necrosis, a deposition of calcium salts occurs in and about them, not because the cell is dead, but because, in the process of dying, the albumin of the cell is so altered as to possess or attain an affinity for calcium to form calcium albuminate. Litten believes that two factors are essential for the production of the calcification, first, necrosis, and, second, restoration of the circulation. This explains why, in our series, the calcium deposit is so much more marked than in cases of permanent ligation, for in such cases the circulation is not reestablished, with the exception of a little collateral circulation. Litten states that the interstitial tissue, the blood-vessels and glomeruli, always remain calcium-free, because these structures have remained unchanged. Litten showed in his experiments that it required compression for more than four hours before degeneration of the interstitial tissue, blood-vessels and glomeruli occurred.

Experiment 5.—One and One-Half-Hour Compression.—(Figs. 3 and 4.)—The deposits of calcium are much increased in number and distribution. The epithelial cells of the convoluted tubules are generally destroyed and absent. In some areas a few tubules show persistent epithelial cells, with nuclei intact. Such focal preservation is probably the result of collateral circulation. In many of the tubules the epithelial lining is completely replaced by calcium deposits. Some of the straight tubules also show these calcium deposits as long, solid cylinders. (Fig. 3.) Even at the papillæ, some calcium deposits can be detected within the tubules. (Fig. 4.)

SUMMARY

The changes in all of the sections are seen to consist, first, of round-cell interstitial infiltration; later, parenchymatous degeneration of the secreting epithelium; and, finally, necrosis of the secreting epithelium with the deposition in and about it of lime salts. The blood-vessels, although congested, show no degenerative changes, and the glomeruli are noticeable in that they show no special changes. The capillary tufts are somewhat congested, but the glomerular space is normal, as a rule, and Bowman's capsule is intact.

The round-cell infiltration, which increases progressively with the length of temporary compression of the renal vessels, shows a marked focal distribution, even when generally present, and is found most marked in the cortex between the tubules just beneath the capsule, less marked in the boundary zone of the pyramids and decreases toward the papillæ. Litten, however, in his report emphasizes the fact that he did not find any interstitial infiltration in any of his experiments.

The parenchymatous degeneration, and later necrosis of the epithelial cells of the tubules, show how dependent they are on the blood-vessels for their nourishment, and that, in the rabbit, they cannot stand even temporary interruption of this supply for more than three-quarters of an hour. One-hour compression causes marked necrosis and calcification. The parenchymatous degeneration, also, is most marked in the cortex, less in the boundary zone, and decreases toward the papillæ; and it also is characteristically seen in patches. Even when the degeneration is intense and general there are always ribbon-like areas of intact tubules whose epithelium is normal. This, as Litten pointed out, is due to some collateral circulation.

Finally, if the compression has been long enough the degenerated cells undergo necrosis and then the deposition of calcium salts occurs in and about them. In the rabbit this occurs if the compression of the vessels has been one hour or longer. In his experiments Litten found that, when the ligature was left on an hour and a half or longer, the epithelium of the convoluted tubules of the cortex and of the boundary zone is doomed to destruction and does not regenerate, even though it again receives arterial blood. Morphologically, however, he found that this necrosis did not show itself for some time. In our experiments we found that, when the kidney was removed forty-eight hours after compression of two hours, marked parenchymatous degeneration was already evident, the cytoplasm staining very poorly and faintly and the nuclei being undemonstrable to a large extent (Fig. 1). Histologically the epithelial cells are found well preserved immediately after taking off the ligature. By the use of indigo-carmin, which is excreted by the intact cells (staining them blue), but not by the destroyed cells, Litten finds that one cannot tell from the morphologic appearance of the cells whether they are functionally normal or not, or how long they have been dead, for immediate injection of indigo-carmin after removal of the ligature applied for two hours shows bluish coloration of the nuclei of the epithelium of the convoluted tubules absent, or present only here or there; that is, there is permanent loss of function, with at first morphologically intact cells, which later become necrotic. Litten further finds that the deposit of calcium is already evident twenty-four hours after compression, and increases in proportion to the progress of the cell death, and progresses so rapidly that several days after the compression large coherent masses are evident.

By injection of the blood-vessels Litten found that they could stand cutting off of the circulation for even four hours without causing serious change in them, and that they were permeable forty-eight hours and even many days after the original operation. Longer compression causes complete necrosis of all of the epithelium of the kidney, even of the areas that were supplied by collateral arterioles.

CONCLUSIONS

From the above series of experiments in the rabbit the following conclusions may be drawn:

1. Temporary compression of the renal vessels, if continued thirty minutes or less, causes very slight changes in the kidney.

2. Temporary compression of the renal vessels, if continued forty-five minutes, causes considerable parenchymatous degeneration and interstitial infiltration.

3. Temporary compression of the renal vessels, if continued one hour, an hour and a half or two hours, causes marked permanent degenerative changes in parenchyma, as is evidenced by marked interstitial infiltration and extensive coagulation necrosis of the tubular epithelium; and, later, by the deposition of calcium in and about the destroyed tubular epithelium.

Note.—As the rabbit's kidney is much more susceptible to interference than the human kidney, it is probable that the human kidney would stand temporary compression of its vessels for a longer time than the rabbit's kidney, before these permanent changes would be produced in its parenchyma.

103 State Street.

ABSTRACT OF DISCUSSION

Dr. Victor D. Lespinasse, Chicago: As a necessary step in my work on anastomosis of the renal artery, I have been compelled to shut off the blood-supply to the kidney by clamps. In my first series of experiments in which the kidney was removed and then the artery to the opposite kidney clamped, cut and anastomosed, all the dogs but one died. In this dog the blood was shut off from his sole kidney for approximately one hour. In those that died the cause of death was shock, death occurring within twenty-four hours after the operation. The bladders were empty, although there was no obstruction to the blood-flow in the anastomosed renal artery. In the second series I clamped, cut and anastomosed, in one renal artery, the clamp remaining on approximately fifty minutes. Ten days later the other kidney was removed. In this experiment all the dogs lived. Hence a dog's kidney will withstand for one hour complete anemia and still be able to sustain life.

Dr. D. N. Eisendrath, Chicago: Dr. Strauss and I became interested in this work chiefly from its surgical importance. Last winter, at a meeting of the medical society in Chicago, we had a discussion as to the advisability of using this method of clamping the renal arteries and veins during operations for the removal of stone in the kidney, and as to what the effect of such temporary anemia on the structure of the organ would be. It was thought that this might do more harm than the losing of a little blood during the operation, leaving the temporary anemia out of the question. Dr. Betton of Chicago said that it might be of interest to study the effects of such temporary anemias as we repeatedly get in surgical operations on the kidney, and Dr. Strauss and I undertook this investigation last winter. Of course, there is this much to be said in regard to the comparison of rabbits' and human kidneys: the rabbit's kidney is an extremely sensitive organ to the withdrawal of blood. So one can deduce only that whereas the slides, shown here, of ligations of fifteen, thirty and forty-five minutes, exhibit practically no changes in such a sensitive organ as the kidney of the rabbit, probably such changes would be still less likely to occur in the less sensitive kidney of the human being when ligated for the same length of time. It is not until the clamp has been left on for an hour that one sees definite changes, such as an extensive amount of round-cell infiltration, degeneration, calcium deposition, etc. The interest of this to the surgeon is that we can safely, judging from the fact that the rabbit's kidney does not show marked changes from a ligation of less than an hour, compress the renal vessels of the human being for half an hour and cut off the blood-supply. No surgical operation on the kidney would be likely to require compression for a longer time than this. For that reason, we feel that this work will be of considerable help to the general operating surgeon.

DR. YANDELL HENDERSON, New Haven, Conn.: The work of Carrel at the Rockefeller Institute has shown a great difference between the effects of interference with the circulation on the side of the vein and on the side of the artery. It seems to me that in such experiments as those of Drs. Eisendrath and Strauss, care should be taken to note whether both artery and vein were shut off, or whether partial compression was used, shutting off the vein entirely and the artery partially. If the vein were compressed completely and the artery only incompletely, the outflow would be shut off and the renal blood-vessels (both arteries and veins) would be distended by the full arterial pressure. The work of Carrel shows that many organs stand interference with their arterial supply fairly well, but are greatly harmed by interference with their venous drainage.

DR. H. GIDEON WELLS, Chicago: Calcification of the tubules is usually very extensive in experiments with the kidneys of rabbits, and one has to consider the fact that the blood of these animals contains more calcium than does that of either the carnivora or the omnivora. The results of such experiments have been applied to the problems of general calcification. This, I believe, is entirely and fundamentally erroneous, for the reason that in the case of the calcification of the necrosed tubules of the rabbit's kidney there is the same process as in calcification of dead organic material in the urine, in which there is a solution of certain organic and inorganic salts, differing from calcification occurring within the body, when the calcium comes from the circulating blood.

A point brought out with regard to Litten's work is that he found no definite relation between the functional changes in these cells and the anatomic alterations. We are too little inclined to bear in mind the entire discrepancy between functional and histologic changes. Although this lack of correspondence of structure and function has been frequently mentioned, yet one so frequently sees it disregarded that I do not hesitate to emphasize this point. The opposite condition also holds good, namely, that extreme anatomic alterations are not necessarily productive of defective functional capacity. In Washington, in May, I presented before the American Association of Pathologists and Bacteriologists a paper describing the effects of the most extensive possible fatty degeneration that I had been able to produce in the liver. I found that the liver-cells in these cases showed as great a power to destroy uric acid, which is difficult to oxidize, as do the cells in the normal liver. Therefore, cells may show extensive histologic changes and yet be functionally competent; and may also show no histologic changes and be totally incompetent.

DR. DAVID C. STRAUSS, Chicago: In the beginning of the paper I did not care to refer to the literature, because there is so much of it, and most of it does not apply to temporary compression, but to permanent ligation. In regard to the functional effect of temporary compression of the renal vessels, I found mention of some experimental work done by Ludwig on dogs. He found that temporary compression of the renal pedicle often caused temporary anuria and albuminuria that remained for hours, or even days; but this did not always follow. In our paper we simply wanted to refer to the anatomic changes produced. As Dr. Wells has pointed out, the functional changes ought also to be studied; however, this is simply a preliminary study. With reference to whether in our experiments there was complete compression of the vein but not of the artery, I would say that the clamp used by us was very strong and was protected by rubber, so that there was little chance of failure to compress the artery entirely. Moreover, in every case I felt the artery in order to be sure that there was no pulsation between the clamp and the kidney, and in some cases put on a second clamp to be more certain. In regard to Dr. Wells' remarks concerning calcification, I did not quite understand the point he made about the deposition of calcium being the same as in the urinary bladder.

DR. H. GIDEON WELLS, Chicago: There is simply a precipitation of calcium as from a sponge. It is not comparable to the calcification of the bronchial glands, for instance.

DR. DAVID C. STRAUSS, Chicago: Litten, in his article, points out that the chief reason why there is so much more calcification in these temporary compression experiments than in experiments in which permanent ligation is done, is the fact that the blood-vessels are not destroyed by the brief temporary compression, and that the circulation through the renal vessels is reestablished. This allows further deposition of calcium to occur; whereas, when the vessels are ligated permanently, the only source of calcium deposit is from the collateral circulation. We did not observe functional changes. They ought, however, to be observed.

THE ETIOLOGY OF EPITHELIOMA *

ARTHUR E. HERTZLER, M.D.

ROSEDALE, KAN.

I. THE DEVELOPMENT OF FIBROUS TISSUE

The result of some studies in the development of fibrous tissue as observed in wound-healing form a necessary introduction to the consideration of the behavior of connective tissue in its relation to developing epithelium. It will be necessary, therefore, to present in outline some researches already published.[1]

The first change in the healing of any wound is the exudation of a colorless serum. Within a few minutes this material begins to coagulate, forming bands extending from one wound surface to another. These bands become fully formed after a few hours. They take the direction most effectual for union. I speak of this process as coagulation because the fibers so formed stain by Weigert's fibrin stain and stain red by Mallory's stain, as is characteristic for fibrin (and Mallory's fibroglia fibrils), and because those things which prevent the coagulation of blood prevent the formation of these fibrils. We have then a tinctorial and a physiologic test in agreement that the process here observed is identical with that of blood coagulation. These fibrils after a few days lose their affinity for the Weigert and the red in Mallory's stain and stain blue with the latter and are, therefore, fibrous tissue. It remains to determine that the fibers staining blue with Mallory's stain after three to six days are the same as those which stain red with Mallory's and blue with Weigert's stain during the first few days.

Two facts are available for this proof. In a large series of experiments in which corn-pith was stitched to a peritoneal surface the fibrin bundles formed over the surface geometrically ("in a mathematical manner" —Kulmann). These results are constant.

After the change in tinctorial reaction has occurred, the fibers have an identical arrangement. If, therefore, the fibrin fibers are replaced by fibrous tissue the arrangement is identical. That they are not replaced finds its chief argument, however, in that a part of a single fiber may stain blue while the remainder still takes the red stain. These results also are constant. From these facts I conclude that the initial process in wound healing is the formation of fibrin identical with that formed in the coagulation of blood, and that the fibrin fibrils are converted into fibrous tissue fibrils.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Hertzler, A. E.: Pseudoperitoneum, Varicosity of the Peritoneum and Sclerosis of the Mesentery, THE JOURNAL A. M. A., Jan. 29, 1910, p. 351.

II. CHANGES IN CONNECTIVE TISSUE IN ARTIFICIALLY INDUCED EPITHELIAL CELL PROLIFERATION

When Sudan III in olive oil is injected beneath the epithelium, epithelial cell proliferation takes place to such an extent as to simulate very closely a beginning epithelioma. The influence of the Sudan oil, according to Fischer, is to act as an attraxin. No attention has been paid to the fact that the connective tissue in the region of the developing epithelium loses its specific tinctorial reaction to connective tissue stains and that epithelium does not proliferate in regions where this change in the connective tissue has not taken place. From study of sections of specimens obtained soon after the oil has been injected and for short intervals afterward, it seems that the connective tissue changes precede the epithelial proliferation. The epithelial proliferation, too, takes place after the use of those dyes only which induce these changes in the connective tissue, namely those of the OH group. The changes in the connective tissue are the reverse of those changes which take place when fibrin changes to fibers, that is to say, the changes are from blue to red instead of red to blue. I am not certain that I have succeeded in completing the reverse process. Fibers occur which stain red by Mallory's stain, but I have not succeeded in reversing the process far enough to get a positive reaction with Weigert's fibrin stain. As a corollary to this line of evidence it may be mentioned that epithelium does not develop in wound-healing in the presence of adult connective tissue. The use of Sudan in the treatment of chronic ulcers has been supposed to act by stimulating the epithelium to proliferation. The connective tissue changes produced by the Sudan when used as an ointment are identical with those induced when the dye is injected. I conclude from such studies that the changes in the connective tissue are probably the essential factor in the production of the epithelial proliferation. When the healing of chronic ulcers is attempted by surgical means we empirically bring about the same condition which we produce by the Sudan, that is, fibrin is supplied, or in other words, we cause the chemical reaction of fibrous tissue to approach that of fibrin.

III. THE CONNECTIVE TISSUE CHANGES IN EPITHELIOMA

In advance of epithelial proliferation in beginning cancer the connective tissue undergoes changes similar to those artificially produced in the Sudan experiments. It no longer stains in a characteristic manner by Van Giesen and stains a paler blue by Mallory's stain. The reaction to Van Giesen is identical with that given by the connective tissue in the Sudan experiments. The results are so constant as to be most valuable in the determination of the clinical character of epithelial cell proliferations. The chief matter of interest, however, is the occurrence about certain cell-nests of small bundles of fibrils which correspond to my fibrin fibrils and to Mallory's fibroglia fibrils. These are found in small numbers in a great variety of tumors. Whether these fibrils result from a reverse change from blue to red or whether they are newly formed is difficult to determine, I am disposed to regard the latter as probable; in the first place, because this corresponds to Mallory's opinion, and in the second place, because one cannot distinguish the change from a degeneration process. In certain rapidly growing tumors granular material reacting to Weigert's stain is found which corresponds to the granular fibrin of the physiologists, which, as stated in my previous paper, does not develop into fibrous tissue. This explains the paucity of stroma in certain rapidly growing tumors.

In exact harmony with these changes in epithelioma and in the Sudan experiments are the changes observed in x-ray dermatitis and beginning epitheliomas resulting from the exposure to the x-rays. These lesions seem to supply the missing link between the Sudan experiments and spontaneous epithelioma. In the x-ray lesions, investigators are in agreement that the changes are primarily in the connective tissue. We have in each of these conditions, the Sudan experiments, the ray proliferations and spontaneous cancer, cell proliferation and changes in the connective tissue and an attempt to determine which is primary is not an easy matter. In the ray tumor and particularly in the Sudan experiments the changes in the connective tissue precede epithelial cell proliferation and there is much collateral evidence that the same is true in cancer.

In the summary of such collateral evidence we are reminded that it was the theory of Thiersch that the primary factors lay in the connective tissue. The fact that blood-vessels are not formed in granulation tissue after the fibrin stage has passed has seemed to me to be in accord with the observation already made that epithelial cells do not develop in the presence of normal connective tissue. These changes in the connective tissue are attended by round-cell and leukocytic infiltration. That cancer is most apt to develop at sites where chronic irritation is most apt to occur is perhaps the most constant factor in cancer etiology. The evidence of inflammatory reaction is present before the epithelial proliferation and the change in the connective tissue occur; in the presence of such irritation it seems but logical to assume as a working hypothesis that the changes in the connective tissue stand in a causal relationship. The x-ray cancer and the epithelial cell proliferation produced by Sudan can be pretty definitely demonstrated as being constantly preceded by connective tissue changes. If the hypothesis that the primary change occurs in the connective tissue be accepted, the nature of that primary change is yet to be determined. In these studies several points have appeared which are of interest. The fibrin fibrils occur about cancer nests, but their causal relation to the developing epithelial cell cannot be determined. The fact that the leukocytes are present in these processes preceding cancer development may in some remote way have to do with the process of fibrin formation. It would seem, however, that this is expressive of reaction against the invading epithelium, just as fibrin, then fibrous tissue forms in granulomas and not as a causal factor. Returning to the experiments with Sudan, we are reminded that those dyes only which have the power of combining with lipoids *in vivo* have this power and that they are all dyes belonging to the OH group. The negation of the properties of the lipoids may permit the processes of coagulation—that is, fibrin formation—to become active.

We know also that cancer cells have a predilection for metastatic formation in certain situations. These sites of predilection correspond in a rough way with the class of phenomena above considered.

These facts have a constant harmony which makes a specific significance probable. In a previous paper[2] I attempted to follow out on clinical grounds some of the circumstances under which cancers develop. In most situations irritations plus an alkaline secretion are coexistent. This crude hypothesis may have some value as a working basis though a comprehensive statement cannot be entered into at this time. We may assume perhaps that a chemical balance has been broken. The latter would seem to be necessary in the explanation of the formation of metastasis, while the former might obtain as a preliminary factor in the development. I will remind you that epithelial metastases occur most frequently in those regions where leukocytes are most abundant (the lymph-glands) or where this prefibrin substance is most abundant (in subendothelial tissues). Metastasis, according to this hypothesis, becomes very closely related to the relation of leukocytes to blood coagulation. The relation of the leukocytes to chronic inflammations and the etiology of epithelioma halts at the same point. We must look to the physiologist for more light.

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[2] Hertzler, A. E.: The Etiology of Epithelioma; A Laboratory and Clinical Study, THE JOURNAL A. M. A., Feb. 8, 1908, p. 425.

The relation of the fibrin fibers, of which I speak, to the fibroglia fibrils of Professor Mallory requires a word. They react to the same dyes and are found in the same *situations, but I am at a loss to know how to go about* establishing proof of their identity. Identity cannot be proved by fibrils produced otherwise than in wound-healing where the age of the fibrils can be accurately determined.

Studies in fibrils less than forty-eight hours old have convinced me of their identity. I desire to say a word about their relation to the cells which he believes produces them. I cannot agree that they may be produced by the cell, for the simple reason that they develop before the advent of the cells and in situations inaccessible to cells. They bridge areas not possible for cells to traverse [illegible] according to mathematical laws [illegible] sumption that they are precipitated out of an amorphous exudate, while the arrangement cannot be explained by the assumption that they are the product as such of the cells; furthermore, at no time can any organic connection between the fibrils and the cell be demonstrated. What influence the cell may have in changing them from fibrin to fiber or what part the cell may have in the production of the material forming the amorphous exudate out of which the fibrils are precipitated by the action of some other factor, I cannot enter into here.

SUMMARY

1. The formation of fibrin is the first step in the formation of connective tissue.
2. Epithelium develops in the presence of fibrin only.
3. In the artificial production of epithelium by Sudan III the first changes are in the subepithelial connective tissue.
4. In x-ray cancer the epithelial development is preceded by changes in the connective tissue which are tinctorially identical with those which take place in the Sudan experiments.
5. The changes in the connective tissue in beginning epithelioma are tinctorially identical with those in the Sudan experiments and in x-ray cancer.
6. The factor most constant in cancer etiology is chronic irritation. Chronic irritation produces the changes above enumerated.
7. The sequence of phenomena above enumerated suggests as a working hypothesis that the etiology of cancer is associated with the lessened acidophilic properties of the connective tissue whereby it approaches fibrin in tinctorial reaction.

402 Argyle Building.

A FURTHER CONSIDERATION OF THE QUESTION OF PERMANENT DRAINAGE IN CERTAIN CASES OF PANCREATITIS *

LE GRAND GUERRY, M.D.
COLUMBIA, S. C.

At the Virginia Hot Springs meeting of the Southern Surgical Association, I read a paper entitled "A Plea for the More General Use of Cholecystenterostomy in Certain Cases of Pancreatitis." I said in part that I believed that the operation advocated was thoroughly consistent with the nature of the diseased process, namely, a chronic inflammation of the pancreas, whether the etiologic factor were gall-stones or infection independent of and apart from stone formation.

From what I have been able to read in books and the current literature, and have observed in the actual work of many large clinics, the operation of cholecystenterostomy in its *relation* to chronic or *interstitial pancreatitis* is not as generally in use by surgeons in this country as it should be.

The whole proposition hinges on this point: It appears that quite a number of cases of chronic pancreatitis require more or less permanent drainage to effect a symptomatic and physiologic cure; that if the pancreatic inflammation has progressed to a certain stage the operation of cholecystotomy does not afford drainage for a sufficient length of time to allow the trouble to subside; indeed, there is a point reached when the pancreatitis itself is incurable, although the symptoms due to insufficient bile drainage may be relieved by operation. In other words, if the pancreatitis which started as interstitial lasts long enough, the islands of Langerhans become involved and we then have the so-called interacinous pancreatitis with its resultant diabetes.

When we consider the comparatively small size of the bile channels, the very low blood-pressure under which bile is secreted, the slight force behind to force it on to the intestinal tract, it is easy to understand that in those cases in which the common duct passes through the head of the pancreas a comparatively slight obstruction would be sufficient to cause the damming back and absorption of the bile. I shall briefly relate a case which is typical of quite a number to serve as a concrete illustration.

M., a man aged 38, married, several years ago had an attack of pain in the gall-bladder region with very slight jaundice, pain occasionally radiating under right shoulder, slight fever, indigestion, etc.; these attacks would occur at frequent intervals; there was a gradual weakening and loss of flesh; no sugar in the urine. The diagnosis was gall-stones or pancreatitis (chronic) or both. At the operation a slightly distended gall-bladder with no stones was found; the bladder was full of the characteristic ropy, tarry, black bile with well-marked colon-bacilli odor to it. The pancreatic head was markedly enlarged. Operation consisted in cholecystotomy after the common duct had been thoroughly explored and a probe passed into the duodenum to insure the patency of choledochus; drainage was continued for three months, and during this time the patient not only gained 20 pounds in weight, but was completely restored to health. This is a sentence from a letter received three months after the wound had been closed: "Dear Doctor: I have just had another attack very much worse than any before my operation; what shall I do?" On my advice, the patient returned to the hospital, at which time cholecystenterostomy was done, with the result that he has been permanently relieved from all his symptoms and is now in perfect health.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

I think it most important to try to determine at the primary operation which cases need permanent drainage and which do not, and not to wait for a recurrence of symptoms to point us to the error of our way, for it is my opinion that this malady is not only a more frequent one, but much more important than is the general belief.

The following from Mayo Robson[1] is very much to the point:

> A simple drainage of the gall-bladder by cholecystotomy is frequently unsatisfactory and cannot be relied on in well-marked cases of obstruction, as drainage of the bile passages is not sufficiently long-continued. This applies especially to the cases in which the interstitial pancreatitis has persisted for some length of time, in which cases, although a cholecystotomy may lead to a disappearance of the jaundice and the digestive symptoms may be alleviated, the metabolic signs found in the urine many months, or even years subsequently, show that recovery has only been partial.

To my mind it is most important to draw a distinction between chronic pancreatitis due to gall-stones and chronic pancreatitis due to infection independent of and apart from the presence of stones; in the first case simple removal of the stones and temporary drainage of the gall-bladder gives permanent relief, because we remove the cause of the disease: in the other case, however, the trouble lies outside of and independent of stone formation, and these cases, within the bounds of my experience, at least, are much more likely to require permanent drainage to affect a cure. On this point Mayo[2] says:

> I am impressed with the fact that chronic pancreatitis is not only a more frequent malady than has been supposed, but a more important one. In looking back over considerable experience in surgery of the gall-bladder and bile-tract, I find that a number of cases that have failed to make a good recovery, failed because of pancreatic complications. It is certain that a much larger proportion of cases, especially those with a distended gall-bladder and dilated common duct, with or without stones, should be treated by a cholecystenterostomy, than has been the practice among surgeons.

This position has been forced on me by an experience which I believe is rather unusual. Very briefly it is as follows: I have had in all fifteen cases of chronic pancreatitis; out of these cases the first twelve patients were treated by cholecystotomy, with the result that nine out of the twelve returned for a second operation, made necessary by a recurrence of the symptoms, at which time cholecystenterostomy was done. I have heard recently from eight out of these nine patients and they all report their general health and strength as being in every way satisfactory. Of the nine patients reoperated on in only one was the pancreatitis associated with gall-stone disease. In the last three cases I have felt justified in making permanent drainage at the primary operation, with the result that the trouble was ended at once. In a recent article Ochsner says, "In rare cases in which the common duct is permanently obstructed, cholecystenterostomy may be indicated." In fully half of my secondary operations for this trouble the patency of the common duct has been proved by passing a probe through the duct into the duodenum, and yet recurrence has taken place.

My experience is, I believe, unusual; the number of cases in which there has been recurrence is out of the ordinary and will probably never be paralleled. I would not for a moment encourage the inference that I believe that two-thirds or one-half of the patients treated by simple drainage would have to be operated on again, but I do insist that this experience is so striking as to merit serious attention; and, incidentally, it suggests that the future will have to determine between temporary or permanent drainage for certain cases of infection of the gall-bladder and biliary passages. There has been one death in this series of cases from ether pneumonia.

I feel, then, that this conclusion is justified: When operating for chronic pancreatitis, if the conditions present do not necessitate cholecystenterostomy, they do present the strongest possible reasons for not making permanent drainage.

PATHOLOGY OF GALL-BLADDER AND BILE-TRACTS*

J. P. RUNYAN, M.D.
LITTLE ROCK, ARK.

In the study of the pathologic physiology of the gall-bladder and gall-tracts we are constantly confronted by the facts that all the various digestive organs, the liver, duodenum, pancreas, stomach, etc., are functionally synergistic, and not, as was formerly supposed, separate and incoordinate units, and that disease in one portion may manifest itself primarily by symptoms referred to an entirely different part. There are also universal symptoms, symptoms common to disease of any part of the digestive tract, which are still considered as neuroses due in some mysterious way to anything or to nothing in particular. The symptomatology of the diseases of the digestive tract is very confusing; and we need not wonder therefore why nearly all diseases of the gall-bladder and bile-tracts are not recognized early and are permitted to develop into dangerous and serious complications before operation is undertaken. Since the pancreas has the fatal defect of sharing terminal facilities with the common bile-duct, and since to that unfortunate arrangement the majority of the diseases of the pancreas are due, for this exposes it to infections and diseases of the gall-bladder and ducts, the early recognition and removal of the pathologic conditions in the gall-bladder and bile ducts is of paramount importance. It is the object of this paper to review the pathology of these conditions and their bearing on an early diagnosis.

Gall-stones are by far the most important pathologic factors we have to deal with. The most important factors which contribute to their formation are stagnation and infection. In old age the muscular tissue about the bile passages atrophies, and this interferes with normal movements of the bile. Lacing and pregnancy in women, and abdominal tumors and adhesions have a tendency to distort the bile passages; these conditions also produce stagnation by pressure. Heredity also plays a part in predisposing to the formation of gall-stones. Stasis is the great factor favoring the development of an infection of the biliary passages. Bile is usually sterile in spite of the open communication that exists between the common duct and the intestinal tract. The current of flow carries material into the intestines, and, even though bacteria are artificially introduced into the bile, they may be carried away by the current without doing any harm. On the other hand a mere ligation of one of the larger bile-ducts in an animal often suffices to set up an inflammation.

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[1] Robson and Cammidge: The Pancreas, Its Surgery and Pathology, p. 446.

[2] Mayo, W. J.: Surg., Gynec. and Obst., December, 1908, p. 611.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

The following facts have been cited in support of the view that infections of the biliary tracts enter by way of the portal vein more frequently than by the common duct. Adami and Ford have asserted that there is a constant passage of bacteria through the mucosa of the healthy intestines; bacteria introduced into the blood may be excreted in the bile (Cushing). The bacteria causing cholecystitis are often not those found commonly in the duodenum. The infection of the biliary passages above a ligature around the common duct could hardly come from an ascending infection. Finally if an enteritis be caused by the administration of arsenic, etc., and if the animal is fed some easily recognizable organisms, such as *Bacillus prodigiosus,* the organisms can often be demonstrated in the bile passages. These facts render it very probable that infection frequently takes place by route of the portal vein. The bile is apt to contain bacteria in pneumonia, typhoid fever and other infections. The bacterial infection produces an inflammation of the mucous membrane and a desquamation of its epithelial cells. These latter contain undissolved cholesterin. They likewise contain calcium salts and these probably react to form the insoluble calcium salt of bilirubin. From this salt, as well as from the amorphous cholesterin in the cells, the biliary calculus takes its origin. Its further growth is carried on by the deposition and recrystallization of new material, especially of cholesterin. Pancreatitis about the common duct also may favor the formation of gall-stones.

In the diagnosis of gall-stones and cholecystitis the history is of great importance and little attention should be paid to the erroneous statement that gall-stones produce no symptoms until impaction takes place. We must also disregard the age of the patient or at least remember that gall-stones can occur before middle age. In fact we should look on every patient who presents himself with indigestion as having some serious lesion of the stomach or gall-bladder, perhaps with complications—till the seriousness is disproved.

The most prominent symptoms of gall-stone disease are a history of long-standing dyspepsia, a capricious appetite, constipation, marked flatulence, independent for the most part of the taking of food, associated with discomfort when the stomach is empty and with comparative ease at night after eating a little. In gall-stone disease we have often at the beginning a sense of constriction but not of actual pain and this sense of constriction is accompanied by a sensation of chilliness which is characteristic. Jaundice, hematemesis, etc., are all late symptoms which will clear up the diagnosis but so late that complications are always present.

From the surgical standpoint it does not make any difference whether we have gall-stones, gastric or duodenal ulcers, pericholecystic or perigastric adhesions; the same incision will relieve them all.

Inflammation of the gall-bladder and bile tracts may depend on causes originating within the ducts, as formation and retention of gall-stones or micro-organisms brought to them from the circulating blood, from the bile or ascending from the intestines. Disease of the pancreas also may cause inflammation in these parts by obstruction of the common duct. Even the majority of tumors of the gall-bladder, the carcinomas, are frequently the result of the trauma and continuous irritation resulting from gall-stone disease.

The disturbances produced by diseases of the gall-bladder and bile-ducts may be conveniently grouped under the following headings:

1. The resulting jaundice.
2. The result of the occlusion of bile from the intestines.
3. The accompanying pancreatitis.
4. The effect of occlusion of the pancreatic secretion from the intestines.

THE RESULTING JAUNDICE

Whenever the lumen of the common duct or both hepatic ducts are obstructed from any cause and the liver cells continue to secrete bile, then the gall-bladder and bile passages become filled with the secretion, the bile pressure within them increases, the liver cells are separated and the bile is absorbed in the lymphatic system or directly into the blood. Thence it is distributed and deposited in various tissues. The bile salts are the most toxic of the constituents of the bile that pass into the blood and are responsible for some of the resulting toxemia. The presence of bile also interferes with the coagulating power of the blood, and prevents operation in some cases on account of the tendency to hemorrhage by diapedesis.

THE EXCLUSION OF BILE FROM THE INTESTINES

The exclusion of bile from the intestines interferes seriously with the absorption of fats, only about 40 per cent. of the fats taken in the food being absorbed, as to the normal 90 per cent. In cases in which the bile is occluded from the intestinal tract we must pay close attention to the diet so as to maintain the nutrition of the patient. The diet should consist principally of proteids and of higher carbohydrates. Fat should not be given, for if present, it will undergo excessive cleavage through the action of intestinal bacteria and pancreatic ferments. The products of the decomposition are very irritating and are responsible for the diarrheas and other disturbances present. What influence the absence of bile exercises on the bacterial decompositions of the lower intestinal tract we are not surely informed about. We know, however, that the putrefaction of proteid material is increased.

THE ACCOMPANYING PANCREATITIS

According to studies made by Dr. C. H. Hoffman, pathologist of the College of Physicians and Surgeons of Little Rock, Ark., the most frequent causes of acute and chronic pancreatitis are gall-bladder and duct diseases. Mayo in 325 operations on the common and hepatic ducts found the pancreas involved in 22 of the cases. Quénu and Duval estimate the simultaneous occurrence of gall-stone disease with chronic pancreatitis as being close to 50 per cent. Williams and Bush in a collection of 83 cases chronicle their presence in nearly 40 per cent. Egdahl analyzed 105 cases and concluded that 42 per cent. of the cases of acute pancreatitis were associated with gall-stones, and inclines to the opinion that they are the most common causes of pancreatitis.

Opie established the proof of this relationship in a post-mortem in a case of Osler's operation by Bloodgood, in which a small stone occluded the ampulla of Vater, forming thereby a continuous passage for the bile from the common duct into that of the pancreas. This he supplemented later by the addition of seven other cases and inferred that in many cases the stone may be lodged temporarily, but long enough to damage the pancreas, and then may escape, without leaving any further evidences of its impaction. Half of the cases examined by Opie showed more or less contraction or obliteration of the duct of Santorini so that it could not perform the functions of Wirsung's duct, when that duct was obstructed by the ordinary passage of an average-sized gall-stone through the pancreatic portion of the common duct without impaction at the ampulla. From this we understand that the actual lodgment and retrojection of bile frequently takes place.

Pancreatitis can be produced also by regurgitation of the contents of the duodenum into the diverticulum of Vater, the route having been opened by the passage of a gall-stone. The head of the pancreas encircles the common duct in nearly two-thirds of all cases. Stones lodged in that portion of the duct press on the pancreas and produce partial if not complete obstruction of its secretion, which can be readily infected either from the duodenum through Santorini's duct or through the ampulla of Vater. The bile is nearly always infected in all cases of common-duct stone and we must consequently anticipate more or less virulent infections of the pancreatic secretion from the same cause.

Flexner injected bile mixed with mucus into the pancreatic duct and found that this diluted bile produced only a mild pancreatitis while if the bile was injected undiluted an acute phlegmonous inflammation resulted. This will be sufficient to show that the etiology of pancreatitis is in most cases identical with that of cholecystitis and cholangeitis.

THE EFFECT OF EXCLUSION OF PANCREATIC SECRETION FROM THE INTESTINES

Complete exclusion of pancreatic juice from intestines without concomitant exclusion of bile is extremely rare. A closure of both ducts does not occur frequently, and likewise a total degeneration of the secreting glandular parenchyma is rare.

Muller studied the feces of several patients who had extensive pancreatic degeneration, and found the absorption of carbohydrates not at all affected by the disease. He found that the absorption of the proteids was only slightly affected, and that the total quantity of fats absorbed was likewise not far from normal. The cleavage of fats in the intestines, however, was considerably diminished, for of the fat in the feces only 40 per cent. was found split into soaps as against the normal of 84 per cent. Others claim that the absorption of fats is greatly diminished. Weintraub's patient lost 25 per cent. of the fat taken in the food and Doucher's two patients lost respectively 52 and 83 per cent. of the fat taken in the food. Later observers, particularly Croftan, have established that in pancreatic obstruction the stools are bulky, because a great deal of the pabulum fails to be assimilated at all and therefore escapes absorption. There is much fat in the stools and the muscle nuclei pass through the intestine in an undigested form (Schmidt's test); in addition lipase may appear in the urine (Hewlett's test); also pentose (Cammidge's reaction) and much dextrose. Dr. Hoffman informs me that he has found the Cammidge reaction of a great deal of service in the diagnosis of chronic pancreatitis but of no value in the acute form.

TREATMENT

The nature and extent of the operation for gall-bladder and gall-stone disease must depend on the condition of the pancreas.

In gall-stone disease with chronic pancreatitis the removal of the stones with temporary free drainage by means of a cholecystostomy is generally sufficient. This drainage relieves the infection caused by the stones and also will do away with the pressure which the pancreas exerts on the common duct. Whenever we have reason to believe that the pancreas is involved, unless there is malignant disease of the gall-bladder or the function of the organ has been destroyed by obliteration of its cystic duct, the removal of the gall-bladder is not advisable. A previous history of cholangeitis, frequent attacks of jaundice, or calculi in the common duct, all contraindicate cholecystectomy, for keeping the gall-bladder intact will permit a secondary cholecystenterostomy if necessary. It must be constantly borne in mind that the mucus secreted by the gall-bladder has a function and protects the pancreas.

I have long ago been impressed with the importance of chronic pancreatitis and have always advocated that all cases of distended gall-bladder and a dilated common duct with or without stones should be treated by a cholecystenterostomy. The gall-bladder has two important functions, one to secrete protective mucus, and the second to relieve the tension in the common duct at the head of the pancreas. In doing a cholecystenterostomy we should constantly bear in mind the function of the bile in the intestines and should never make our anastomosis between the gall-bladder and the colon unless circumstances demand it. The most logical place for such union is between the gall-bladder and the duodenum as near the opening of the common duct as possible, but in some cases the duodenum is placed so deep or is so firmly fixed by adhesions as to render a union there almost impossible.

In gall-stones and gall-bladder trouble complicated by an acute pancreatitis the pancreas should be incised, free drainage established and it is better to employ the anterior abdominal incision than the posterior one. If the patient's condition will permit it, and there are stones in the gall-bladder or the ducts, or an acute infection of the bile passages, the stones should be removed and drainage of bile established through a right lateral incision. If jaundice is present drainage is imperative.

It will be seen from the foregoing that in all diseases of the gall-bladder and ducts an early diagnosis is the only means we have of preventing serious complications. To wait for repeated attacks of biliary colic, for vomiting, or hematemesis, or pancreatitis to make our diagnosis before operating would be a very dangerous procedure. Since we do not wait for a mastoid abscess to produce a sinus thrombosis, or for a gastric or duodenal ulcer or an inflamed appendix to perforate and produce peritonitis why should we wait for gall-stones to impact and develop a whole train of sequelæ before operating?

1902 Schiller Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. GUERRY AND RUNYAN

DR. L. F. SCHMAUSS, Alexandria, Ind.: It is stated in the literature that gall-stones do not produce symptoms in about 90 per cent. of the cases. In 90 per cent. perhaps gall-stones do not produce symptoms early—that is, typical symptoms, like colic, jaundice, and so forth—but to say that in 90 per cent. of all cases of gall-stones there are no symptoms is wrong, and not according to the observation of anyone who gives the subject serious thought. I maintain that in all cases of cholelithiasis there are symptoms before the patient reaches old age; that in 90 per cent. of them there are more or less serious symptoms before that period, and that in at least 10 per cent of all cases of cholelithiasis the symptoms will be so severe as to necessitate operation These patients all have so called dyspeptic and neuralgic symptoms for many years, which means that we should give them more attention Not only are they diagnosed as gastralgia or neuralgia of the stomach, but even as appendicitis malaria, and so forth and this statement that 90 per cent of cholelithiasis cases give no symptoms is to a great extent responsible, I think, for these wrong diagnoses

A CASE OF DIAPHRAGMATIC HERNIA

A BAMBERGER, B S, M D
CHICAGO

I report this case not only because of the rarity of diaphragmatic hernia, but also because of the abstruse and puzzling symptoms it presented

Past History—The patient, W W, a negro butler, aged 23 had had the diseases of childhood, gonorrhea several times but denied syphilis He used alcohol and tobacco in moderation but denied coming in contact with lead in any form He had never had a similar illness and was well up to the onset of the present trouble Ten years previously he had been stabbed in the left seventh intercostal space just lateral to the anterior axillary line The cut was about 2 inches long, through which a mass looking like fat (as he described it) protruded The wound was sutured under general anesthesia and an uneventful recovery followed

Present Trouble—About 12 30 a m, July 24, 1910, he entered my service at the Cook County Hospital He gave the following history Five days previously a sharp pain started on the left side of the abdomen about 2½ inches below the costal arch, which grew so severe that he was unable to sleep that night He vomited, but had no chills or fever Bowels had been constipated since the onset of the pain, and resisted all cathartics and flushings that a physician had administered The pain on the left side of the abdomen, which had radiated to the epigastrium, and the vomiting and constipation persisted until entrance to the hospital On the day before admittance to the hospital he vomited a brownish material which as he expressed it looked like manure

Examination—The patient walked into the ward, but apparently had some pain He was well nourished There was no cyanosis or dyspnea, temperature 99 2 F per mouth, pulse, 64, respirations 24 on admittance The pupils were equal and reacted to light and accommodation There was no rigidity of the neck and no lead line along the gums The throat was negative The lungs expanded equally on both sides Dulness began posteriorly one hand's breadth below the angle of the scapula There were no abnormal palpatory, percussion or auscultatory findings The pulse was full, slow and regular The heart was on the left side of the chest, not enlarged and showed no murmurs The abdomen was not distended, and peristaltic waves could not be seen or auscultated There was tympany all over Some tenderness and rigidity were present over the entire abdomen but especially in the region of the appendix In the right anterior lumbar region there was an ovoid tumor mass tympanitic and tender, but not movable Liver and spleen were not palpable The genitalia were negative There was no stricture, prolapse or tumor of the rectum Knee jerks were present, no Babinski or ankle clonus The urine was amber, clear, specific gravity 1,038, no albumin, no sugar, no casts, leukocytes, 6 250

Course—Repeated colonic flushings and '1 2 3" enemas were given with no results and twelve hours after admittance the patient was practically in the same condition as when he entered, so the diagnosis of intestinal obstruction was made, the exact type of which was not known, and an operation decided on Because of the good condition of the patient and the lack of marked abdominal symptoms, some physicians who saw the patient believed the condition to be an acute catarrhal appendicitis with paralytic ileus

Operation—An incision was made in the mid line of the abdomen. The appendix was normal, but the cecum and ascending colon were markedly distended. The small intestine was run through, but no obstruction was found The transverse colon was distended but the colon below the splenic flexure was collapsed In the lower border of the diaphragm, just to the left of the median line, was a hole large enough to admit the finger tip, in which a knuckle of the descending colon was bound down so firmly by adhesions that it was deemed safer to let the obstruction alone, and do a lateral anastomosis between the portion of the colon proximal to the obstruction and the sigmoid This was done in the usual way A drainage tube was inserted in the left side of the abdomen, the peritoneum and fascia were closed with continuous catgut, and the skin was sutured with interrupted silkworm gut

Postoperative History—For four days after the operation the patient had a temperature of 99 8 to 102 F per rectum, and on July 30, five days after the operation he had a bowel movement He then made an uneventful recovery

The points to be considered in this case are:

1 The long time (ten years) elapsing between the time of injury to the diaphragm and the occurrence of the hernia

2 The relatively few symptoms of intestinal obstruction and its close resemblance to appendicitis; also the good general condition of the patient, which is not usually seen in intestinal obstruction, and the fact that the patient recovered after being ill six days with an intestinal obstruction, in which condition the mortality is very high after forty-eight hours' duration.

100 State Street

ACCIDENTS DUE TO SWIFTLY MOVING MACHINES, AND THEIR AUTOMATIC RATIONAL PREVENTION

ESPECIALLY AS CONCERNS INDUSTRIAL CONDITIONS

WILLIAM J MANNING M D
Medical Officer Government Printing Office
WASHINGTON D C

The conscientious physician always seeks the removal of the cause of any disease that may come under his treatment when that is possible, rather than the treatment of mere symptoms that tend to recur so long as the cause remains.

We may apply this sound principle with practical results to the prevention of accidents arising from swiftly moving or power-driven machines If manufacturers or factory owners should have passed in their respective states, a provision or clause in any law as concerns liability between the employer and employee the respective state insurance commissioners to pass on all details of bond application, based on the following, or a similar method.

The manufacturer, builder, or agent of the machine shall place an indemnity bond with an approved surety company, to the amount of, say, 5 or 10 per cent of the total cost of the machine, which bond is to run during the estimated life or period of usefulness of the mechanism, as shall be agreed on, such bond to be drawn on by the employer or manufacturer after an accident, for the purchase of safety devices, bulwarks, mechanical guards, etc, to be placed on the specific machine so covered

This method should insure to the builder or agent of the machine

1 The avoidance of the moral responsibility of maiming employees for life

2 The saving of large treasure if state governments should adopt such a measure, that is wasted at the present

time and otherwise would continue to be wasted, so far as prevention and a repetition of the accident are concerned.

3. Safety measures that are automatic in their function and operation, both obtained at a minimum of cost.

4. Relief of courts of law from the burden of time and expense in passing on the party at fault—the manufacturer as an employer, or the employee through negligence.

5. Universality and automatism of action and scope, whether the machine is a clattering loom in a New England cotton factory, a fast perfecting printing-press in New York City, or a threshing-machine on some Western farm.

6. Ingenuity of the mechanician or draftsman brought into play at the erection or construction of the machine, in order that the builder or agent may receive low rates on his bond or insurance for a well-protected machine, as is the case of a house well protected from fire—resulting in a low rate of insurance.

7. The minimum expense involved at the time of the construction of machinery in covering all dangerous points.

To the manufacturer or employer it should insure:

1. Relief from mental anguish, responsibility and worry after an accident.

2. Avoidance of expense and reduced profits on his output as the sequel to an injury.

3. Tranquillity of mind, in that defects or dangerous parts of machines that may and do cost him treasure will receive attention hereafter, as well as increased quantity and quality of output—minus damages—that he has apparently heretofore lost sight of.

4. Very little, if any, increase in the cost of machines to him, owing to growing competition and the low cost to the builder of safeguarding machine when it is under construction.

5. The right to sue builder of machine at any time to recover the sum paid for the mechanism, the law holding the sale or transaction void unless bond has been properly filed in the first instance.

To the employee or mechanic it would insure against:

1. Physical pain and misery.

2. Reduced earning capacity.

3. Death, or invalidism for life.

4. The receipt of possible injuries to limbs for which mere money could not hope to offer adequate compensation.

EXTENSIVE WOUND OF THE EYE BY AN INFECTED INSTRUMENT

RECOVERY WITH RETENTION OF VISION

EDWARD ARMITAGE, M.D., M.R.C.S. (Eng.)
Government Physician for the District of West Kau, County of Hawaii
NAALEHU, T. H.

History.—Between 3 and 4 p. m., May 16, 1910 while Iopa Kahula, an 8-year-old Hawaiian boy, was engaged in cutting an old leather whip-lash with his knife, the lash being suddenly divided, the blade of the knife penetrated his right eye. His mother, on seeing blood and water flowing from the wound, carried him into the house, laid him on a couch, and bound up the eye with a handkerchief. Between 5 and 6 p. m. the same day, I was summoned to see the boy.

Examination.—I found that there was an extensive, incised wound of the sclerotic and cornea, and felt convinced that the eye would eventually be lost. However, I determined to make an endeavor to save it and adopted the following plan of treatment.

Treatment.—There being no apparent prolapse of the iris, the eye was thoroughly irrigated with a solution of mercuric chlorid, 1 to 1,000; a solution of atropin, containing 1/50 grain was instilled; the eye was covered with a thick layer of cotton-wool and bandaged; the strictest repose in the recumbent position and the most complete quiet were enjoined.

Naalehu is specially renowned for two climatic features, viz., prevalence of high winds and accumulation of dust; the boy's house was close to the dusty highroad, and was certainly not much cleaner than that of the average poor Hawaiian. Throughout my district of West Kau, there was no hospital or semblance of hospital accommodation; and for this reason I decided to examine and dress the eye but once a day, while I most forcibly enjoined on the parents and on the boy himself, that on no account was the dressing to be touched; that the boy was to lie on his back constantly; that soft food only was to be given to him, in order to prevent, as far as possible, the movement of the facial muscles during mastication, and that he was to be brought, still in the recumbent position, lying on a wagon, every morning to my office, which was situated not far from his residence.

Every morning the boy was brought to my house, the wound and eye were carefully irrigated with a 1 to 1,000 solution of mercury bichlorid, four drops of a 1 per cent. solution of atropin sulphate were instilled into the right eye, and one drop of the same solution into left eye; then, both eyes were carefully padded over with cotton-wool and carefully bandaged. After the first day or two, 10 grains of sodium salicylate were administered every two hours, throughout the progress of the case.

Entering the sclerotic, 1 mm. below the center of the lower border of the cornea, in the "dangerous zone" of Nettleship, the blade of the knife divided the sclerotic and cornea, emerging from the latter 1 mm. below the upper and inner border of the cornea, thus making a somewhat curved incision, which was distant 1 mm. from the inner border of the cornea, the length of the wound being 6 mm.

May 17 there was keratitis and iritis; no pain, but some swelling of the eyelids; the wound appeared to have closed satisfactorily. May 20 the boy could not see light with the right eye, evidently owing to the previous effusion of blood, and I noticed after the first day or two that the pupil had taken on a grayish tinge, indicating the presence of cyclitis. The above symptoms gradually subsided, and on May 26 the boy was able to see me with the wounded eye for the first time since the injury. There was no pain on slight pressure on either eyeball, while the corneal wound was completely healed with a leukoma along its borders. May 30 I discontinued the use of the 1 to 1,000 solution of mercuric chlorid and commenced to irrigate the eye with a sterilized solution of boracic acid. May 31 I instilled three drops of a 1 per cent. solution of atropin into the right eye and continued the one drop in the left eye. On June 6 the left eye was exposed, but the one drop of 1 per cent. solution of atropin was still continued every morning. No unpleasant effects have followed from the prolonged use of the atropin, and it was only on inquiry on June 9 that I elicited from him the statement that his mouth was dry. June 12 the boracic acid lotion was changed for sterilized physiologic saline solution, and two drops of a 1 per cent. solution of atropin were instilled into the right eye, the drop in the left eye being continued. The sodium salicylate, 10 grains every two hours, was continued as before. June 13 I supplied the patient with a pair of orange-colored spectacles, in order to cut off the influence of the actinic rays of the spectrum. The bandage was discontinued, but a piece of cotton-wool was placed over the right

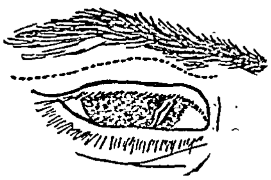


Fig. 1.

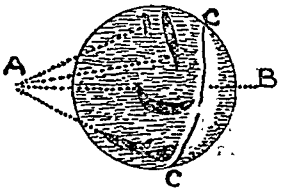


Fig. 2.

Fig. 1.—Eye of patient, after sketch made July 11, showing scar and leukoma; dotted line, vein on lid.

Fig. 2.—Diagram of the cornea (Sept. 23, 1910); black spots (*A*) indicate apertures in stretched iris; white streak (*B*), scar and leukoma; line (*C*), blood-vessels supplying cicatricial tissue.

eye, behind the spectacle glass. He was now allowed to sit up. June 19 one drop of solution of atropin was instilled into each eye, and June 24 the instillation of the solution of atropin into the left eye was discontinued. June 27 the use of the 1 per cent. solution of atropin was discontinued in the right eye. July 4 I made a measurement of the cicatrix and of the leukoma with the curved strabismometer, and July 11 made a sketch of the eye (Fig. 1).

The cicatrix of the incision presents a beautiful linear scar bordered by two blood vessels, and by the leukoma which at its widest part was then 2 mm. in diameter; the length of the corneal cicatrix was 5 mm. August 25, the boy not having come to see me previously during this month, I made an ophthalmoscopic examination of his right eye.

No details of the fundus were to be made out by either direct or indirect examination, but oblique focal illumination showed that, since the discontinuation of the atropin, the iris had been drawn in on all sides toward the cicatrix, completely covering the pupil, but presenting within its texture several apertures through which good vision was obtained (Fig. 2). There was no pain or inconvenience whatever, and no tendency to staphyloma.

September 22 the leukoma measured 1 mm. at its widest part. The eye, apart from the anterior synechia and the scar, is normal in appearance. Distant vision with the right eye is apparently perfect, the near vision is somewhat difficult to determine, as the patient is unacquainted with the alphabet, but he takes pleasure in looking at, and recognizes the objects in picture books, though when interrogated he says that he sees "small" with his right eye.

A peculiar feature in connection with this case is the development of a vein, proceeding from the inner border of the upper eyelid, along the median portion of the lid towards the outer canthus. Possibly this communicated with the angular vein and so with the ophthalmic vein.

Taking into consideration the very successful results which have followed the treatment of the above case and the good vision which the patient possesses with his right eye, I do not propose to perform any operation on the iris at present. At present I am instilling three drops of a 1 per cent. solution of atropin into the eye daily.

There is an old and time-honored maxim which asserts that "meddlesome midwifery is bad." How much worse is unnecessary interference in the healing process of such a delicate organ as is the eye!

CEREBROSPINAL FLUID OF ANOMALOUS CHARACTER IN A CASE OF INTRA-SPINAL TUMOR

C. M. COOPER, M.B., Ch.B.
SAN FRANCISCO

Since the cerebrospinal fluid is frequently examined as an aid to the diagnosis of cerebrospinal disease it seems wise that any anomalous finding should be reported.

The fluid withdrawn under a pressure of 160 mm. of water, from a patient without fever, and with signs of a localized segmental lesion of the cord, had the following characters:

Macroscopically, it was clear and of a yellowish-brown color, looking like the clear serous fluid that is aspirated from pleural or peritoneal effusions. On standing a well-marked cobweb coagulum formed. The Noguchi and Nonne globulin tests were strongly positive, thick precipitates occurring. The Wassermann complement reaction was negative in the fluid as in the blood.

Microscopically, practically no cells were to be found either in the centrifugalized fluid or in the coagulum. No bacteria could be detected.

Dr. Hyman, who later operated on the patient, and I came to the conclusion that we were dealing with a case of chronic compression of the cord, probably due to an intraspinal tumor, but an explanation of the findings in the cerebrospinal fluid did not suggest itself. At operation a strongly marked edema of the membranes was found below the site of the tumor (an angiosarcoma). The transudate character of the fluid seems thus explained.

A similar finding, then, would suggest the presence of a compressing agent plus the probable concomitant occurrence of edema of the membranes, and would warn one to beware of the false localizing signs that may occur with such edemas.

SAPHENOUS VARIX SIMULATING FEMORAL HERNIA

ALFRED H. NOEHREN, M.D.
BUFFALO, N. Y.

To the well-known saying, "The man who never makes mistakes in diagnosis never does autopsies," I would add "and never operates." Of all the surprises I have ever had, either in operations of my own or in those at which I assisted, the case I am about to describe was the greatest. The rarity of the condition found and the importance of differentiating it from femoral hernia are my reasons for publishing this case.

History.—On Oct. 11, 1910, I was called to see Mrs. K., a woman of 37, mother of seven children, the youngest being 3 years old, who had always been in good health and had worked hard all her life. She complained of crampy pains all over her abdomen, but most severe on the lower left side, together with continual rumbling of gas. As she had been constipated for a few days, she had taken several doses of castor oil. These increased the pain, although they brought on a fairly good bowel movement. There were no other complaints.

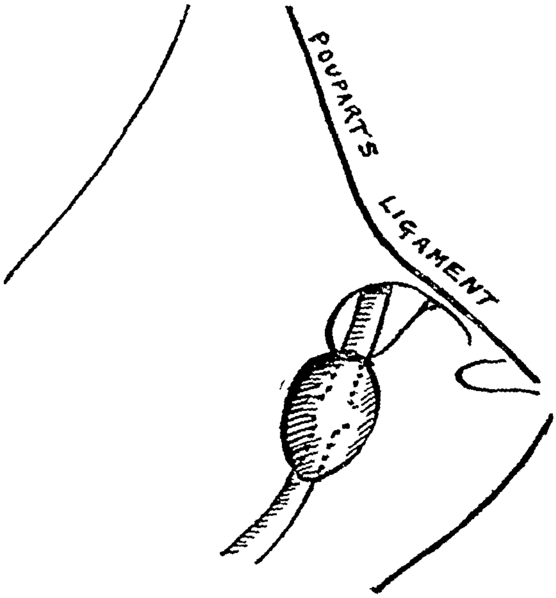


Diagram of saphenous varix simulating femoral hernia

Examination.—Temperature was 98 F.; pulse, 112. The abdomen was not tender, was soft, there were no masses felt or swelling noticed. Just below the saphenous opening on the left side, however, was a swelling about as large as a walnut. It was not tender, was easily reducible, especially when the patient lay down, and gave a most decided impulse on coughing. The patient said she had noticed this swelling ever since the birth of her last child and that it had never given her any trouble. I made a diagnosis of femoral hernia and told the patient it would be well to have it operated on, telling her of the danger of strangulation, etc. Her abdominal cramps I attributed to the cathartic and treated her accordingly.

Three days later I was called again. The abdominal pains had grown worse, especially on the lower left side, and radiated down the left thigh. She had frequent soft stools and the rumbling of gas was marked. Temperature was 100 F.; pulse, 124. Peristaltic waves could be seen over the lower left abdomen, where there was also tenderness and more resistance than on the right side. The hernial mass was a little larger, was tender, and was no longer reducible. Operation was now most urgently advised, but absolutely refused. During the day, the temperature rose to 102.6 F. and an indistinct mass could be felt in the lower left quadrant of the abdomen. On the evening of the next day, the bowels moved, but with much difficulty and straining. There was considerable resistance in the lower left side of the abdomen and the entire abdomen was moderately swollen and tympanitic, especially over the course of the colon. The patient felt nauseated and vomited a little bile. The hernial mass was tense, tender, and flat to percussion. Temperature was 102.2 F.; pulse, 124. Operation was now insisted on. The patient was taken to the German Deaconess Hospital at once, where I operated that same evening.

Operation.—An incision was made over the supposed hernial swelling and large enough to do a radical operation for the cure of femoral hernia. Imagine my surprise on dissecting out the mass to find that it did not emanate from the saphenous opening at all, but was continuous on either end with the internal saphenous vein just below its emergence from the saphenous opening. It formed a sacculated pouch springing from the anterior wall of the vein. The vein was tied off above and below the tumor and the latter removed. On opening, it was found to contain a fairly fresh unorganized blood-clot and the wall of the pouch was a dilatation of the wall of the vein. There was no hernial sac visible, neither was the femoral ring abnormally large; nevertheless I sutured Poupart's ligament to the pectineal fascia with one catgut stitch, thus preventing the possibility of a future hernia or the recurrence of one that might have slipped back into the abdomen. The wound was closed with interrupted silkworm-gut sutures. Examination under anesthesia now revealed a large infiltrating mass occupying the pouch of Douglas and extending upward into the left side of the abdomen. I decided to terminate the operation at this point and await developments.

Subsequent History.—The patient ran an irregular temperature ranging from 99 to 103 F. for ten days, after which it suddenly came to normal, where it stayed during the remaining eight days that she was in the hospital. During this time, the pelvic mass became gradually smaller and on her discharge could barely be felt. As it gave no symptoms and seemed to be gradually disappearing, the patient was tentatively discharged from the hospital.

In looking over the literature, I find a saphenous varix in this location a vary rare occurrence. I could find no case reported in the last three years. Although varicosities are common enough in the long saphenous vein, they are uncommon in this situation. According to MacCready's statistics quoted in von Bergman's and Keen's text-books on surgery, a saphenous varix was mistaken for femoral hernia nine times as against forty-seven times that abscess and one hundred and fifteen times that enlarged lymphatic glands were the cause of a mistaken diagnosis.

So much for a simple varix. But to find such a tumor, with impulse on coughing and easily reducible, after three days no longer reducible and tender in a patient with rising temperature, abdominal cramps, swollen tympanitic abdomen, and the other symptoms I have mentioned, was an unusual coincidence.

The explanation was simple enough after the operation. The varix had become thrombosed during the three days and the temperature and abdominal symptoms were due to the pelvic exudate.

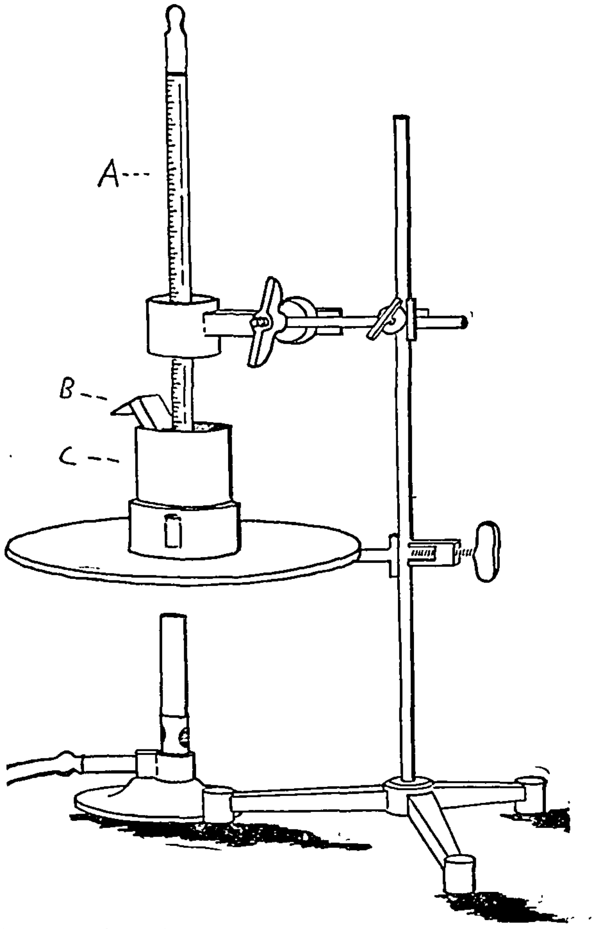
519 East Utica Street.

A SIMPLE APPARATUS FOR ACCURATELY FIXING BLOOD-SLIDES BY HEAT

GEORGE B. LAWSON, A.M., M.D.
ROANOKE, VA.

In fixing blood-slides by heat, one finds that the results of the copperplate method are so inconstant that it is difficult to get a good specimen unless one keeps in constant practice. There is no way of determining the exact amount of heat used or of keeping the heat regular. I have devised the following simple apparatus for office and laboratory use:

As shown in the illustration, an ordinary laboratory standard supports an iron dish, C, resting on an asbestos plate, under which is a gas burner. This iron dish is easily made by screwing a two-inch nipple into a pipe cap. This dish is filled with petrolatum, into which is sunk a small, thin copper cup so that the end sticks out as shown at B. This cup is just large enough to admit with ease the glass slide. In the petrolatum is sunk the bulb of a thermometer, A. The exact temperature is registered by the thermometer. The slide may be introduced by using a small copper strip bent at an angle at the ends; and when the blood is sufficiently heated the slide and copper strip are withdrawn. With Ehrlich's stain I have obtained the best results by heating to 280 F. for seven minutes.



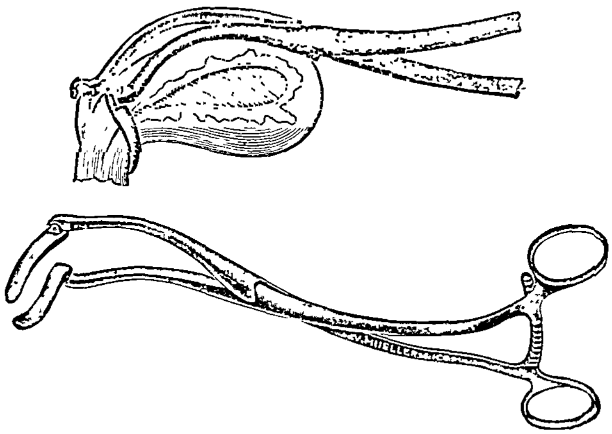
Apparatus for fixing blood-slides by heat. A, thermometer for registering amount of heat; B, copper cup for holding blood-slide; C, dish containing petrolatum in which cup with blood-slide is immersed.

The disadvantages of this apparatus are that it requires constant attention. The advantages are that the slide may be accurately heated, and this may be done by one's untrained office assistant, whereas by the copperplate method one can hardly get constantly good results no matter how well one is trained.

AN IMPROVED UTERINE CLAMP AND RETRACTOR

A. MILES TAYLOR, M.D.
SAN FRANCISCO

The clamp illustrated is one which I have devised, believing that it will serve the purpose for which it is intended better than any clamp heretofore available. I find it very useful in all cases in which it is desired to elevate and hold up the uterus. Being devoid of teeth it does not injure or macerate the parts. The curves of the instrument allow it to fit around the uterus and it is not in the way in operating on the uterus or appendages from any side. In some cases it may be used as a retractor. The jaws of the instrument are bent so as to grasp and surround the neck of the uterus without in any way injuring it. The jaws being on a swivel are not apt to produce sufficient pressure to do damage.


The uterine clamp and retractor, showing it applied to the uterus.

I have used the instrument in abdominal hysterectomies, removal of the appendages, in operations for ovarian lesions, shortening of the round ligaments, ventral fixation, removal of interstitial and subperitoneal fibromyomas, and in bringing up the uterus to expose the bladder.

Therapeutics

THE LOCAL APPLICATION OF DRY HOT AIR

The general practitioner will never be able to apply personally the major elements of physiologic therapy to any great extent because of the elaborateness of the plant required, but some of the minor elements can be perfectly utilized by the general practitioner, and most gratifying therapeutic results obtained. The local application of dry hot air is one of the most useful of them.

There are on the market several forms of apparatus for its application, all of which will do good work. In order to be efficient an apparatus must be capable of producing 400 degrees Fahrenheit in fifteen minutes at the outside, and of maintaining this temperature indefinitely. In order to be useful to the general practitioner these machines must also be easily portable. They may be heated by gas, gasoline, alcohol, or electricity, but one that is to be used in general practice should be supplied with a gasoline attachment, whatever other heating agent is usually employed, as the gas-pressure in some houses is not sufficient to produce an adequate degree of heat, electricity is available in only a few houses, and alcohol is not generally satisfactory for several reasons.

Preparation of the patient for the application is simple, consisting merely in covering the part of the body to be treated with three thicknesses of loose-meshed Turkish toweling, so as to secure intimate contact between wrapping and skin. If the perspiration which is induced as soon as the heat strikes the skin, is allowed to remain on the skin during a treatment, it will soon boil under the influence of the intense heat and blister the patient. These wrappings absorb it as soon as it is formed, the heat immediately vaporizes it and it rapidly diffuses itself out of the wrapping.

Directions for the general operation of the machines, are furnished by the manufacturers. Complete treatises on thermaerotherapy can be obtained by those who take more than a passing interest in it.

The physiologic effect of the dry hot-air application is produced in two ways: first, by thermic irritation of the numerous nerve-endings in the skin, and second, by the actual raising of the temperature of those portions of the body in immediate contact with the heat.

Irritation of the nerve-endings of the skin results, by reflex action, in (1) marked dilatation of the capillary areas, hence greatly increased blood-supply, (2) enormously increased functionation of the sweat-glands, hence increased local elimination, and (3) acceleration of the cell nutrition and function through reflex stimulation of the spinal centers. The raising of the temperature, *en masse*, results in acceleration of the chemical reactions constituting the cell metabolism of the part. It will be observed that the combination of these influences result in increased physiologic resistance of the tissues affected and acceleration of the process of repair of damaged tissue elements.

The sphere of action of this application, then, is in the treatment of pathologic conditions which are strictly local in character, and which can be happily influenced by increasing the local physiologic cell resistance and the local nutritional, absorptive, and eliminative functions. Such conditions obtain in many diseases encountered by the general practitioner but it will suffice to mention three which illustrate the different types of cases in which the local dry hot-air application is most useful. These three are (1) sprains, (2) most cases of true rheumatism in which but one or two joints are involved, and (3) local septic infection of the extremities before the process has involved the lymphatics connecting the affected part with the trunk, and in which the general toxemia resulting from the local lesion is not profound enough to overwhelm the organism as a whole.

SPRAINS

In an uncomplicated sprain the lesion consists simply of a traumatic solution of the continuity of soft tissues about the affected joint, accompanied by severe pain probably due to congestive irritation of lacerated nerve fibers. The therapeutic indications are (1) to relieve pain, (2) so to influence the trophic functions as to secure the quickest possible repair, and (3) to promote absorption of the exudate.

Increase in the physiologic resistance of cells is not called for in this condition, but acceleration of the nutritional, absorptive and eliminative processes are indicated; practically clinical experience demonstrates that the local dry hot-air treatment is well qualified to satisfy the requirements. If a sprain is put under treatment by this agent within three or four hours after the injury has been sustained, the pain will be relieved within half an hour, and all traces of the trouble will usually have disappeared within forty-eight hours. If the case is three or four days old, however, and exudate is present to any great extent, complete removal of disability may require from two to three weeks; but the pain is usually susceptible of the same immediate relief as in early cases.

The local dry hot-air application also serves as a valuable diagnostic test in these cases, by informing us as to whether or not a fracture coexists. When a fracture complicates the case the treatment will usually relieve the pain somewhat; less frequently it will not relieve it at all, and sometimes it makes it worse. Its power to effect practically complete relief of pain is so universally observed when the lesion is uncomplicated, that failure to produce such relief is almost positive evidence that a fracture is present.

RHEUMATISM

In this affection we have an acute, infectious, inflammatory process, probably specific in nature, characterized by intense pain and more or less effusion, both probably due to local toxin irritation. The therapeutic indications, then, are to increase the physiologic resistance of the invaded regions and to accelerate elimination from this region. A sufficient increase in the physiologic resistance of the threatened cells would stop the invasion and immediately decrease the number of the invading organisms, which would immediately lessen the virulence of the toxemia attributable to them; accelerating elimination would still further lessen toxemia; and dilating the capillary areas would relieve blood-vessel spasm and whatever stasis of blood-vessel contents might be dependent thereon.

Clinically, dry hot air demonstrates its capacity for producing all these effects and some cases of rheumatism can be cured by it alone. The proportion of such cases, however, is not large enough to justify confining our therapeusis entirely to this agent, and salicylic acid, in some form and in adequate dosage, should always accompany the dry hot-air treatment. When these two remedies are used in combination, however, there result (1) immediate relief of the pain, however severe, (2) a shortening of the duration of the disease to from five to ten days, (3) a lessening of the likelihood of cardiac involvement because the rapidity with which control over the condition is obtained diminishes the time period during which the infection threatens structures other than those originally affected. When this picture is compared with that resulting from ordinary antirheumatic therapeusis, the beneficent rôle which dry hot air plays in the management of this disease becomes at once apparent.

This happy picture, however, applies only to uncomplicated cases in which but one or two joints are involved, cases in which the general toxemia is not severe enough to depress the general nervous system seriously. When the general toxemia is very severe, the development of a satisfactory recovery will necessitate invoking the powerful influence on general metabolism and elimination of the general or body application. The local application will be just as effective in relieving pain but the relief will not last as long and it will not be as complete. Neither does this picture apply to cases of arthritis deformans, neuritis, inflammatory joint or bone lesions, or malignant disease, which are so often misdiagnosticated as rheumatism.

The foregoing implies that salicylic acid sustains more or less the relation of a therapeutic specific to rheumatism. Now it has become quite the fashion in recent years, on the part of some eminent clinicians, to assail this belief which has become so firmly grounded in the mind of the average practitioner by his years of bedside experience with the drug—to maintain that it is purely and simply a pain-reliever. To one who habitually sees much of arthritis deformans in its early stages and of neuritis, a possible explanation suggests itself for these beliefs in the number of instances in which really eminent clinicians mistake neuritis and arthritis deformans in its early stages, for rheumatism, and prescribe salicylic acid. Of course the patient derives only more or less temporary relief of pain from this procedure; salicylic acid exercises no special curative effect on these conditions. Then again, however specific a curative agent may be, adequate dosage is required in order that it may manifest its specific properties, and salicylic acid is prescribed with astonishing frequency, in ludicrously insufficient quantities.

The last word has by no means yet been said regarding the specificness of salicylic acid as a remedy for true rheumatism. As a matter of fact, it cannot be said until the specific causative factors of the disease have been isolated and defined, so that a specific definition of rheumatism may be formulated, and we may be sure that we all mean the same thing when we use the term.

LOCAL SEPTIC INFECTION

This is another condition in which the physiologic influences of local thermaerotherapy are most appropriate. The disease process is of distinctly local origin, it involves a lowered vitality, or lack of physiologic resistance on the part of the involved tissues, and in the majority of cases it occurs on one of the extremities at a considerable distance from the trunk.

The therapeutic indications are (1) to increase the physiologic resistance of the invaded structures, whereby the pabulum of the micro-organisms is so modified as to inhibit their development, lessen the virulence of their toxic emanations, and finally to accomplish their destruction; and (2) to eliminate as rapidly as possible the toxic products already present in the affected parts.

A comparison of the physiologic action of this therapeutic agent with the pathology and therapeutic indications present in this ailment, explains at a glance why dry hot air would be expected to inhibit helpful attributes, and the clinical findings again bear out most happily the theoretical deductions. If a case is put under treatment before suppuration has been established and before the infective process has invaded that portion of the limb (lymphatics or other structures) immediately contiguous to the trunk, the pathologic phenomena will usually be abruptly arrested and the inauguration of convalescence will coincide with the first treatment. If suppuration at the point of infection has been established, the destructive process will become sharply and quickly localized when, by a stroke of the knife, the pus can be evacuated and the case brought to a rapid and satisfactory termination. If, however, the lymphatics at the junction of the affected part with the trunk are involved or if general toxemia is severe enough to seriously depress the central nervous system, the local application will have to be either superseded or accompanied by the general or body treatment.

Among other conditions in which the local application of hot air is more or less useful are pneumonia, pleurisy, acute gout, synovitis, fibrous ankylosis, some cases of neuritis, varicose ulcers, and sluggish healing processes not due to malignant, tuberculous or syphilitic infection. The physiologic action of hot air is definite and constant and hence constitutes a reliable guide as to what sort of pathology will yield to its influence.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 31, 1910

[The large amount of space occupied by the index this week makes it necessary to omit some departments and to curtail others.]

THE CAUSE OF GENERAL PARESIS

Softening of the brain, general paralysis of the insane, or, in its more modern terminology, general paresis, has become a wide-spread affection. In the therapeutic attack on it we stand helpless, and therefore any clues that may be offered regarding the factors that assist in its development are eagerly grasped at in the hope that they may lead to its conquest.

Since Fournier's time the most widely accepted belief has been the syphilitic origin of paresis. Many English psychiatrists have maintained, and some even now hold, that sexual excesses, especially sexual aberrations, fellatio in particular, may cause the disorder in the absence of syphilis, but the more careful analysis of histories, the newly acquired knowledge concerning pseudoparetic syndromes in brain tumor, in arteriosclerosis, in multiple sclerosis, in alcoholism, plumbism and allied toxemias, and particularly the utilization of the cytologic examination of the spinal fluid with the Wassermann test of both blood and spinal fluid—these have all served to establish more firmly than ever the dictum, "without syphilis no paresis."

But even when this is said, the goal has not been reached, for the newly explored field of comparative psychiatry shows some very striking anomalous conditions, which compel one to stop and analyze the factors, especially since it would appear in the light of these newer facts that some other element than syphilis alone is essential.

It was but natural that alcohol should have been thought of as the chief contributory element in this etiologic chase. The early French psychiatrists so taught, and the belief is fairly universal that alcoholism and syphilis are the necessary elements. But we learn of the high percentage of paresis among peoples such as the Japanese, who have a low percentage of alcoholism and a high percentage of syphilis. Conversely, recent studies of the native peoples of North Africa—Mohammedans for the most part, and non-alcoholic—show that general paresis is extremely rare among them, in spite of the fact that from 60 to 70 per cent. of the population of some regions suffer from syphilis, all stages being represented.

Only a few years have gone by since it was announced that the cause of paresis was to be found in a definite bacterium. Originally explained as a primary infection, the rôle of Ford-Robertson's diplococcus has fallen from that of a possible infectious factor secondary to that of an ordinary laboratory contamination. The possibility of light has been shut off in this direction.

Can comparative psychiatry throw some light on the subject? This question seems to be answered in the affirmative in a recent communication by Rudin,[1] based on some studies of paresis made on the native races of Algeria. Rudin has gone very completely into the much-discussed question concerning the presence of paresis among these races, and has apparently established the fact that for the present state of occupation and culture the native races of Algeria, notwithstanding a 60 to 70 per cent. infection with syphilis, are free from paresis, and the evidence further points to the fact that syphilis is no new disorder in Algeria, but was probably introduced there in epidemic form about the same time that it showed itself in Spain and Italy, *i. e.*, in the post-Columbian period.

Rudin looks on the process of civilization as the answer to the problem, which he looks at from two points of view.

In the first place, the severe stress of higher civilization and race culture shows itself more particularly in the nervous system. Modern modes of life place particularly heavy burdens on the nervous energy and the nerve centers. One result of the struggle with syphilis and excessive nerve-strain combined is paresis. In primitive peoples, in whom the latter factor is absent, the brain does not give way, and syphilitic lesions are more common in those parts of the body more exposed to physical wear and tear, namely, the skin and the bones.

Secondly, the advance in superiority of the white races, which has come about largely through increasing complexity of the nervous system, has entailed a high percentage of hereditary shortcomings. The studies of Julius and Arndt have shown, contrary to the usual belief, that hereditary factors are very prominent in the ascendants of paretics. It thus becomes plain that, after all, paresis, although primarily a result of infection, brings into high relief the general problem of the relation of soil to the processes of destruction. Given a brain not deteriorated by hereditary factors and not called to work at the high pressure forced on it by modern factors of civilization, a syphilitic infection rarely leads to a paretic breakdown. This is the final conclusion of this interesting study of Rudin in the field of comparative psychiatry.

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[1] Rudin: Allg. Ztschr. f. Psychiat., 1910, No. 5.

A LITERARY CENTENNIAL OF MEDICAL INTEREST

This year, as the hundredth anniversary of the death of Charles Brockden Brown, one of the earliest of our American novelists, should not be allowed to pass unnoticed among physicians. Brown died from tuberculosis at the early age of thirty-nine. He was one of the men who, like John Addington Symonds and Robert Louis Stevenson, refused to give in to the disease, continued his work bravely, fought off the inevitable as effectively as possible and succeeded in accomplishing a good life's work in spite of his malady. Had he been a "quitter," tuberculosis would probably have taken him much earlier in life and with nothing done.

The story of his career has a therapeutic interest for those who have to do with tuberculous patients. There is an additional reason for medical interest in him, however, for Brown must be considered an important contributor to medical historical literature. In one of his stories, "Arthur Mervyn," he has given us probably one of the best descriptions of an epidemic ever written. It is a vivid picture of one of the awful epidemics of yellow fever which at the beginning of the nineteenth century used to rage in Philadelphia every few years.

We have, by the way, a series of descriptions of epidemics which were written by non-medical men, and which are classics in literature. Thucydides' description of the plague at Athens, Boccaccio's account of the Black Death in his introduction to the "Decameron," Defoe's "Journal of The Plague Year in London," are masterpieces, each in its own way. Brown's description of the Philadelphia epidemic has been placed beside these by Prof. John Erskine in his volume on "The Leading American Novelists." He says that "Brown's was the realism of the journalist. He had an instinct for headlines with the gruesome details, diagrammed and illustrated."

Now that we have reached a point at which we seem to be able to control the spread of epidemics, and now that the history of epidemic diseases begins a new chapter, the old chapters retain at least a historical interest. It is hard now to realize the awful condition of affairs that used to recur in Philadelphia every few years from the introduction and spread of this disease, now regarded as tropical or subtropical. As a matter of fact, however, during the late eighteenth century and early nineteenth century, not only Philadelphia, but New York and even Boston suffered severely from yellow fever. Indeed, the disease occurred so frequently in Philadelphia and worked such ravages among the local population that the question of abandoning that city is said to have been seriously discussed at one time during the first quarter of the nineteenth century, because the site was supposed to be almost hopelessly insanitary. In the intervals, malaria raged there with special virulence, showing that there were abundant opportunities in the neighborhood of the city for the development of mosquitoes of all types. The Philadelphian Rush was an authority on yellow fever, while the elder Pepper, also a Philadelphian, was considered to have great experience with malaria. In another half century or more these diseases will have receded still farther from our horizon. Then Brown's realistic description of the epidemic which he witnessed will be a valuable original document—all the more valuable because it will show the triumph of sanitary science over what seemed to be hopeless conditions.

THE INDEX

With this issue we present the semiannual index. We call attention thus prominently to this feature of THE JOURNAL because we are continually impressed with the fact that the tremendous labor connected with it is not appreciated, nor is the practical value of the index realized, except by very few of our readers. It is worthy of emphasis that this is not only an index of the articles which appear in our own journal, but an index of most of the original articles that have appeared in most of the medical journals of the world for the last six months. In other words, the semiannual index issued with the last number of each volume of THE JOURNAL is an index of the progress made in medicine, covering all its phases, in every part of the world. As will be noticed, the matter is indexed both by title and by subject, being fully cross-indexed; and in addition there will be found a complete authors' index.

Another point to which attention should be called is this: The index is reprinted in pamphlet form, in which are included also the titles which have appeared week by week in THE JOURNAL. The advantage of this pamphlet,[1] the "Guide to Current Medical Literature," is that it is more easily handled than is the file or bound volume of THE JOURNAL, and thus the references are made more accessible.

Current Comment

SALVARSAN ("606")

In the Pharmacology Department of this issue,[2] appears an interesting and valuable report by the Association's laboratory on the chemistry of Salvarsan ("606"). While much has been written about this new remedy for syphilis, particularly about the technic of its administration, comparatively little has been said regarding the chemical identity of the drug. The report of the Association's chemists is a timely one and will enable physicians to follow more intelligently the directions for preparing the injections. The description of Salvarsan, which is given in concise language, makes clear the chemical properties of the substance, a knowledge of which should be possessed by those who purpose using it. As the report states, the investigation of Salvarsan was taken up at the request of the Council on Pharmacy and Chemistry in connection with the inclusion of this product with New and Nonofficial Remedies. This fact calls attention to three things: First, the United States is the only country in which the medical profession has its own body of expert pharmacologists and chemists to conserve its interests and thereby the interests of the public. Second, those manufacturers who consider the suggestion that they submit their products to the Council, for verification of the claims made for them, as a reflection on their probity, should note that those who sell this remedy, which may prove one of the therapeutic achievements of this century, do not hesitate to court the fullest investigation of the product. Third, it makes clear the fact that the Council examines each product impartially and without fear or favor. It is not only possible but probable that the enthusiastic claims which some of the users of this new remedy are making for it will, in the light of future developments, be greatly modified. Nevertheless, whatever opinion may be held regarding the ultimate value of Salvarsan, it is evident that the greater the amount of available information regarding it, the sooner will its true therapeutic status be determined.

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[1] See advertising page 2, this week's issue.
[2] Page 2314.

THE BAT AS A DESTROYER OF MOSQUITOES

It is said that a Texas county medical society plans to ask the legislature of that state to pass a law protecting bats on the ground that they are efficient destroyers of the mosquito. The general cultivation of bats, even as inmates of homes, is also said to be recommended. No doubt the bat is an efficient insect-destroyer, but it is repulsive to most people, and, like the spider, which is an enemy to the infection-bearing house-fly, or the lizard, which is often tolerated or encouraged among tropical peoples, it is not considered a desirable housemate by the tidy housekeeper of our country. In addition, the bat sometimes carries certain objectionable parasites of its own, such as *Cimex*. Thus, although the bat has its place in the economy of nature and may render us more service than we have been aware of, as a household pet it is hardly fitted to make homes happy, or even altogether hygienic.

GENERAL SHERMAN'S OBSERVATIONS CONCERNING COLDS

A wholesale illustration of the effect of outdoor living in preventing colds is contained in a letter of General Sherman to his wife written from Goldboro, North Carolina, during the Atlanta campaign. He speaks of his men, after having passed through the rigors and exposures of that strenuous campaign, and after being equipped with new clothing, as a fine-looking set of soldiers, brawny, strong and swarthy, a contrast to the weak and sickly-looking men who came to him in Kentucky three years before. He observes: "It is a general truth that men exposed to the elements do not catch cold, and I have not heard a man cough or a sneeze for three months; but were these men to go into houses, in a month the doctors would have half of them. Now the doctors have no employment." A writer in the *Dietetic and Hygienic Gazette* refers to this as a "symptomatic observation worthy of a doctor, but unexpected in so great a general." He says that the general was not making a holiday health speech, but writing a universal cold-cure recipe, for a remedy which is as free as air and as bounteous as the canopy over us, and which any one can procure and use.

Medical News

ALABAMA

The Red Cross on Automobiles.—Forty-seven of the physicians of Birmingham, on the request of the chief of police, have placed on the fronts of their automobiles the Red Geneva Cross, whereby these are given the right of way over other vehicles.

Personal.—Dr. William W. Dinsmore, Decatur, has been appointed supervisor, for the state, of the Rockefeller Commission for Medical Research with headquarters in Montgomery.——Dr. Henry G. Perry, Greensboro, has been appointed general field agent and Dr. J. F. Orr, Littleton, has been appointed field worker.——Dr. James F. Meyers, Decatur, has severed his membership with the Morgan County Medical Society, and expects to locate in Springfield, Ill.——Dr. P. B. Moss has succeeded Dr. E. Marion Mason, Montgomery, as state bacteriologist.

ILLINOIS

Physician Wins Damage Suit.—Dr. Archie W. Barker, Springfield, won the suit in which a patient asked $20,000 damages on the ground that Dr. Barker, in performing an operation for fistula, cut a muscle in such a way as to injure the patient for life.

Dispensary Staff Named.—The Springfield Tuberculosis Association announces the following active medical staff of the tuberculosis dispensary which will be in operation January 1: Drs. Charles L. Patton, John W. Kelly, Charles P. Colby, Samuel E. Munson, Milton G. Owen and George T. Palmer, who has also been elected superintendent. The consulting staff is composed of Dr. Lewis C. Taylor, president of the association and Dr. George F. Stericker.

Cook County Institutions.—The newly elected president of the Cook County Board precipitated a contest for supremacy between himself and the County Commissioners. At present, Dr. Charles F. W. Eberlein, formerly assistant superintendent, has been declared acting superintendent and, acting on orders from the president, has refused to obey the orders of a committee of the County Commissioners to turn the keys over to them.——Dr. Oscar C. Willhite, formerly superintendent of the Cook County Institutions, Dunning, was presented, on December 20, with a silver loving-cup by 200 employees of the institution, in token of their high regard for him. He had resigned rather than obey the order of the new president of the board to discharge two employees without trial. Their alleged offense was abuse of a patient, a charge of which Dr. Willhite declared that he was unable to find reliable evidence.

County Physicians Elect.—At the annual meeting of the Monroe County Medical Society, Dr. Stephen Kohlenbach, Columbia, was elected president; Dr. Arthur F. Schellschmidt, New Design, vice-president; Dr. Louis Adelsberger, Waterloo, secretary (reelected); Dr. Jacob C. Fults, Waterloo, treasurer; and Dr. John S. Sennott, Waterloo, delegate to the State Medical Society.——Champaign County Medical Society held its annual meeting in Champaign, December 8, and elected the following officers: Dr. William Rees, St. Joseph, president; Dr. Lucy A. Exton, Thomasboro, vice-president; Dr. Jennie Lyons, Champaign, secretary-treasurer; and Drs. Albert S. Wall, William L. Gray, both of Champaign, and James S. Mason, Urbana, censors; Dr. John Marten, Tolono, delegate to the state society; and Dr. Thomas J. McKinney, Gifford, alternate.——The thirty-seventh annual meeting of the Northern Central Illinois Medical Association was held in Peru, December 7, and the following officers were elected: Dr. Alfred E. Owens, Princeton, president; Drs. Thomas W. Burrows, Ottawa, and Ezra T. Goble, Earlville, vice-presidents; Dr. George A. Dicus, Streator, secretary-treasurer.——Winnebago County Medical Society, at its annual meeting, held in Rockford, December 13, elected Dr. William H. Fitch, president; Dr. Allen C. Eakin, vice-president; Dr. Frank W. Hanford, secretary-treasurer; and Dr. William E. Park, censor, all of Rockford.——The La-Salle-Peru Medical Society, at its annual meeting in LaSalle, December 13, elected Dr. Samuel G. Mengle, Peru, president; Dr. Walter W. Greaves, LaSalle, vice-president; and Dr. Frederick A. Guthrie, LaSalle, secretary-treasurer.

Chicago

Bequests to Hospitals.—By the will of the late Michael Cudahy, $2,500 is devised to St. Elizabeth's Hospital, and a similar sum to St. Joseph's Hospital.

Fined for Misbranding.—Charles Gilbert Wheeler of the Wheeler Chemical Works, Chicago, is said to have pleaded guilty, December 21, to selling an adulterated and misbranded headache remedy (Anadol). This nostrum was exposed in The Journal, May 21, 1910, in a report from the Association laboratory following an analysis of the stuff by the Association's chemists.

Nurses' Meeting.—The Visiting Nurses' Association of Chicago announces its annual meeting to be held at Fullerton Hall, Art Institute, Jan. 4, 1911, at 4 p. m. Addresses will be made by the president; by Dr. Rachelle S. Yarros on "The Relation of the Visiting Nurse to Settlement Work;" by Dr. William A. Evans on "The Visiting Nurse in the Municipality;" and by Dr. William P. Merrill on "The Personal Note in Social Service."

INDIANA

Local Association Organized.—The physicians of Owensville met November 28, and organized the Owensville Medical Association, and elected Dr. John M. Williams, president, and Dr. Thomas L. Lockhart, secretary.

Provisions for Hospitals.—The will of George F. Johnson, New Jersey, which bequeathed $50,000 to Logansport for the erection of a public hospital in memory of his parents, has been held valid by the courts.——Contracts have been let for the construction of a hospital to cost $60,000 at the Southern Insane Asylum, Evansville.

Tuberculosis Farm Dedicated.—Boehne Farm, the open-air hospital of the Vandeburg County Antituberculosis Society, was dedicated November 27. The farm was donated to the association by Mr. John W. Boehne who also donated $5,000 to the movement. The camp is ready for occupancy and can accommodate at present seventeen patients.

Case Against Unlicensed Practitioner Dismissed.—The case of the state against R. A. Winkleman, Bluffton, charged with practicing medicine without a license, is said to have been dismissed November 28. The defendant conducted a sanitarium for some time, and when charges were filed against him, he sold his institution, and is said to have stopped illegitimate practice.

Specific Instead of General Provisions.—The State Board of Medical Registration and Examination held a conference at the state house, December 15, with representatives of the nine accredited colleges and universities of the state to place a specific construction on entrance requirements of the medical colleges. The present law provides that students seeking admission to a medical school shall have at least two years' work in an accredited college or university.

Personal.—Dr. James W. Milligan, surgeon of the State Penitentiary, Michigan City, has been appointed deputy warden of the institution.——The county commissioners of Marion County, at their meeting, December 16, made the following Indianapolis appointments: Dr. Benjamin S. Potter, superintendent of Marion County Insane Asylum, Julietta; Dr. Clarence L. Marlatt, physician and surgeon at the Poor Asylum; Dr. Thomas L. Sullivan, Jr., physician and surgeon at the Workhouse, and Dr. James R. Anthony, physician and surgeon at the jail.

County Elections.—The Fort Wayne Medical Society, the Medical Society of Allen County, held its annual meeting in Fort Wayne, December 6, and elected the following officers: president, Dr. J. Clifford Wallace, Fort Wayne; vice-president, Dr. Lyman T. Rawles, Huntertown; secretary, Dr. Garrette Van Sweringen, Fort Wayne; treasurer, Dr. Elmer E. Morgan, Fort Wayne; censors, Drs. Samuel H. Havice, Edward J. McOscar and Eric A. Crull, all of Fort Wayne.——Vigo County Medical Society, at its annual meeting in Terre Haute, December 5, elected Dr. Myron A. Boor, president; Dr. Charles N. Combs, vice-president, and Dr. Bennet V. Caffee, secretary, all of Terre Haute.

IOWA

Society Meeting.—At the annual meeting of the Pottawatamie County Medical Society, held in Council Bluffs, December 6, Dr. George A. Spaulding, Avoca, was elected president; Dr. N. Jasper Jones, Shelby, vice-president; Dr. Grant Augustine, Minden, secretary-treasurer, and Dr. Willis F. Pierce, Carson, censor. Council Bluffs was selected as the next place of meeting.

Hospital Notes.—The physicians of Fort Madison, aided by liberal-spirited citizens, have taken over and reopened St. Elizabeth's Hospital founded by the Franciscan Sisters, and have made it entirely self-sustaining.——Dr. David S. Fairchild, Clinton, has written the State Board of Control strongly endorsing the project of establishing a state hospital for epileptic patients.——The State Board of Control has decided to join the State Board of Education in asking the next legislature to establish a psychopathic hospital. This is to be a kind of clearing-house of patients afflicted with various kinds of mental diseases.

MARYLAND

Typhoid Epidemic Checked.—Only twenty midshipmen with typhoid fever remain in the hospital at Annapolis, the rest having recovered sufficiently to go home on leave. No new cases have developed for ten days.

To Abolish Contract Practice.—Physicians of Cumberland met December 20, and adopted a resolution "to abolish all contract practice as applied to medical service of every sort in the city." Dr. Francis E. Harrington was chairman of the meeting, and Dr. John B. Littlefield, secretary.

Bequests.—By the wills of Mrs. Mary E. Burns and her daughter, Mrs. Ella B. Beaston, Eudowood Hospital for Consumptives, near Towson, will eventually receive a bequest of nearly $350,000. Other bequests provided are $10,000 to the Hospital for the Women of Maryland, $10,000 to the Church Home and Infirmary, $5,000 to the Baltimore Day Nursery, and $1,000 to Dr. Thomas C. Stellwagen, Jr., Philadelphia.

Personal.—Dr. John Sloan, organizer of the Board of Trade of Lonaconing, was given a banquet, December 20, prior to his departure to his new home in North Yakima, Wash.——Dr. William L. Smith has been appointed physician of the Baltimore county jail, and Dr. W. E. Ensor, physician of the county almshouse.——Dr. Arthur L. Wright has been elected pathologist at Spring Grove State Hospital for the Insane, vice Dr. Robert P. Winterode, resigned.

Baltimore

Near the Million.—The Johns Hopkins University fund has reached $950,000, leaving only $50,000 to be subscribed to complete the million necessary to complete the fund for the removal of the institution to its new site at Homewood.

Personal.—Dr. William J. Schmitz has been promoted to second assistant bacteriologist in the city health department. ——Dr. George L. Wilkins, city jail physician, was seriously injured and bruised, December 21, by being caught in an ascending elevator in the jail.

Donation to School.—Mrs. William Painter has given $20,000 to the Children's Hospital School to be used for the erection of buildings for the education and care of convalescent, crippled and invalid children. Other buildings will, it is contemplated, be erected in the future.

MICHIGAN

Personal.—Dr. Henry M. Joy of the Calumet and Hecla medical staff, has returned from Europe.——Dr. A. Verne Wenger, Grand Rapids, who has been ill in a hospital with septicemia, is convalescent and has resumed practice.——Dr. Homer I. Kedney, Marcellus, was painfully injured, December 15, by being thrown from his cutter.——Dr. George E. Moore, Ironwood, has been reelected physician of Gogebic County.—— Dr. William H. Marshall, Boyne City, has started for Europe. ——Dr. H. Allen Moyer, Charlotte, fractured his right arm and sprained his right wrist recently while cranking his automobile.

State Tuberculosis Society Meets.—The fourth annual meeting of the Michigan Society for the Prevention of Tuberculosis was held in Ann Arbor, December 10. The following officers were elected: president, Dr. Alfred S. Warthin, Ann Arbor; vice-presidents, Drs. Guy L. Kiefer, Detroit, and Edward F. Abrams, Dollar Bay; secretary, Miss Carroll Welton, Ann Arbor; treasurer, Dr. Henry J. Hartz, Detroit; and directors, Miss Ella Hubbard, Houghton; Drs. Charles Jennings and

Guy L. Kiefer, Detroit, and Mrs. M. W. Smith, Hastings (reelected), and Mrs. Lucy Toms, Lapeer, and Miss Carroll Welton, Ann Arbor.

MISSOURI

Elections.—At the annual meeting of the St. Joseph-Buchanan County Medical Society, held December 7, the following officers were elected: Dr. Samuel F. Kessler, president; Drs. John I. Byrne and James F. Owens, vice-presidents; Dr. Herbert Lee, secretary; Dr. John M. Bell, treasurer, all of St. Joseph, and Dr. Clarence O. Jefferies, Savannah, delegate to the state association, and Dr. Charles R. Woodson, St. Joseph, alternate.——Platte County Medical Association, at its meeting in Platte City, elected the following officers: Dr. Egbert R. Hull, Camden Point, president; Dr. John W. Shulz, Weston, vice-president; Dr. Albert S. J. Smith, Dearborn, secretary; Dr. Frank M. Shafer, Edgerton, treasurer; Dr. Joseph J. Carter, Weston, delegate to the state association, and Dr. James H. Winter, Parkville, censor.——At the annual meeting of the Grundy County Medical Society, held December 6, in Trenton, Dr. William H. Winningham was elected president; Dr. Edgar A. Duffy, vice-president; Dr. Samuel Sheldon, secretary; Dr. William D. Fulkerson, treasurer and censor, all of Trenton, and Dr. John M. Stone, Laredo, delegate to the state Medical Association.——Jackson County Medical Society, at its annual meeting in Kansas City, December 6, elected Dr. Jefferson Davis Griffith, president; Dr. James Q. Chambers, vice president; Dr. Edward L. Stewart, secretary; Dr. William F. Kuhn, treasurer, and Dr. Frederick T. Van Eman, censor.

St. Louis

Hospital Saturday and Sunday.—The donations on account of Hospital Saturday and Sunday have passed the $41,000 mark, and the managers expect that not less than $50,000 will be donated for the charities of the city.

Work Commenced on Hospital.—Ground has been broken for the new hospital to be erected by the Sisters of Mercy to form the clinical department of St. Louis University. The building will be five stories in height, will have 125 private rooms and 4 wards, and will cost $350,000.

The Cocain Crusade.—Following the report made to the police department that cocain was being sold very generally in the downtown district, the police on November 20 and 21, arrested seventeen individuals charged with selling or using cocain. One of the defendants, charged with peddling cocain without license, was discharged, December 1, on account of the case against him not being properly prepared. Meanwhile, cocain traffic is said to flourish openly. A reporter for a local paper purchased nine packages of cocain in the course of twenty-four hours.

NEW YORK

New Sanatoria.—The Tupper Lake Sanatorium Corporation has been given permission to establish a private sanatorium for the treatment of tuberculosis at Tupper Lake.——The supervisors of Saratoga County have decided to build a tuberculosis sanatorium for the county, and have appointed a committee of five to investigate sites, secure the consent of authorities, prepare plans and specifications and report back to the board.

Opposition to Hospital Overcome.—Approval has been given by the State Commissioner of Health, Dr. Porter, and Health Officer Dr. J. S. White, Moreau, to the application of the Metropolitan Life Insurance Company for the establishment at Mount McGregor, Saratoga County, of a hospital eight miles out of Saratoga for the treatment of its employees afflicted with tuberculosis. The plan was vigorously opposed by the residents of Saratoga Springs, who asserted that it would injure the village as a summer resort.

New York City

Oppenheimer Institute Not Approved.—The State Board of Charities at its last meeting refused to approve the certificate of incorporation of the Oppenheimer Institute, which claims to cure the drink habit. This action is part of a fight that is being made against the institute by the New York County Medical Society on the ground that the law provides that a corporation may not advertise to practice medicine unless it be a hospital corporation formed under the membership corporation law and have obtained a certificate of incorporation from the State Board of Charities. The case is still pending.

Koch Memorial.—At the New York Academy of Medicine meeting, December 15, the president, Dr. John A. Wyeth, gave a brief memorial address on the late Dr. Robert Koch, honorary fellow of the academy. Dr. S. Adolphus Knopf, who was a student under Dr. Koch, presented a portrait of Dr. Koch. In closing his remarks Dr. Knopf said "Let this portrait which shall henceforth grace the walls of our beloved academy, this likeness of a prince of science, a teacher of teachers, one of the greatest physicians of his time, remind present and future academicians of Koch's motto in life: 'Nunquam otiosus' (never be idle). Let it be to us an inspiration, an incentive, and a reminder of the fact that though man has done much, there is still more to do."

Alliance Between Hospital and Medical School.—Announcement has just been made of a gift of $1,500,000 to the Presbyterian Hospital, for the purpose of making possible an alliance between the hospital and the medical department of Columbia University. Edward S. Harkness gave part of the money himself and presented the remainder in behalf of a donor whose name he was not at liberty to mention. This alliance has been under discussion for some time and when it is finally consummated there will exist practically the same relation between the two institutions as now exists between the Johns Hopkins University and the Johns Hopkins Hospital. The fundamental principle of the alliance is that the university, in return for the privilege of making all nominations to the hospital staff, shall meet the expenses of all scientific and educational work associated with the hospital. It is for this purpose that the gift has been made. There are certain conditions imposed by the donor, some of which may be changed from time to time. One condition calls for the privilege of placing a memorial tablet in the new building of the hospital, which is soon to be erected, and it is rumored that this tablet will be in memory of Dr. Andrew McCosh. This is the first alliance of this kind between a medical college and a hospital in this city.

NORTH CAROLINA

Health Talks.—Dr. Watson S. Rankin, secretary of the State Board of Health, Raleigh, addressed the school teachers of Mecklenburg County at Charlotte, December 5, on "The Vital Problems of Public Health and the Teacher's Responsibility."

Society Meetings.—The first annual meeting of the Seventh District Medical Society, which includes the counties of Mecklenburg, Anson, Cabarrus, Lincoln, Union, Gaston, Stanly, Cleveland and Rutherford, was held in Charlotte, December 6. Dr. Andrew J. Crowell, Charlotte, acted as temporary president, and Dr. Robert H. Lafferty, Charlotte, as temporary secretary. The next meeting will be held in Gastonia.——Forsyth County Medical Association held its annual meeting in Winston-Salem, December 13, and elected the following officers: president, Dr. Aaron Y. Linville; vice-president, Dr. Everett A. Lockett; secretary, Dr. Eugene P. Gray, and delegate to the Medical Society of the State of South Carolina, Dr. Thomas W. Davis, all of Winston-Salem.

OHIO

Appropriation for Laboratory.—Dr. Bernhard F. C. Becker, health officer of Toledo, with the help of the Toledo Academy of Medicine and a federation of the Women's Clubs, has secured the approval of an appropriation of $1,000 for a bacteriological laboratory for the city.

Academy of Medicine Meets.—At the meeting of physicians of East Liverpool, Wellsville, Chester and Newell, held in East Liverpool, November 25, the Ohio Valley Academy of Medicine was organized. Dr. George P. Ikirt, East Liverpool, was elected temporary chairman. The academy proposed to follow the postgraduate course suggested by the American Medical Association.

PENNSYLVANIA

Personal.—Dr. Wilmer R. Ba [illegible] gistrar, was taken to the Harrisburg [illegible] uffering with appendicitis.——Dr. Pau [illegible] to the State Hospital, Warren, is suffering with septicemia, contracted in performing an autopsy.

Loving-Cup Presented.—Dr. Edward H. Small, Pittsburg, who has been compelled on account of illness to move to Saranac Lake, N. Y., sent his resignation to the Pittsburg Academy of Medicine, of which he was one of the first members and the founder of its library. The Academy of Medicine declined to accept the resignation and sent Dr. Small a message to that effect accompanied by a silver loving-cup in token of the affection and esteem in which he is held.

Bequest.—The will of the late Elizabeth W. Garrett, widow of the late Casper S. Garrett, the millionaire paper manufacturer, provides for a country home for poor children and deserving single women. Nearly $500,000 is bequeathed to relatives on condition that they withdraw all claim to 200 acres of farm lands and buildings thereon, situated near Newton Square, Delaware County. The institution is to be known as the "Garrett-Williamson Lodge," and will be run on principles similar to the country week associations.

Philadelphia

Research Laboratory for Stomach Hospital.—Plans for a research laboratory for the American Hospital for Diseases of the Stomach have been approved by the managers. The new building will be a two-story fireproof structure equipped with the latest appliances.

Wills Eye Hospital Appointments.—At a meeting of the board of city trusts on December 13, last year's officers of the Wills Eye Hospital were reelected. Dr. John A. Kenney was appointed resident surgeon and Drs. Luther C. Peter and Elmer E. Johnson were made clinical assistants.

Frankford Hospital Enlarged.—The Frankford Hospital formally opened the new Adele D. Schlechter Maternity, the Schlechter Home for Nurses and the Hunter Home for Nurses on the evening of December 16. Besides these additions, a wing to the Frankford Hospital building is in the course of erection.

New Anatomic Building.—The building of the former Pennsylvania Dental College, purchased some months ago and presented by Mr. Daniel Baugh to the Jefferson Medical College, is to be remodeled to serve as an anatomic laboratory. The cost of reconstruction will be about $100,000, also the gift of Mr. Baugh, and the building will be known as the Daniel Baugh Institute of Anatomy of Jefferson Medical College.

Small-Pox on Steamer.—When the North German Lloyd steamer *Chemnitz* was docked on December 17, the health officers sent five children with measles and one, supposed to be suffering with chicken-pox, to the Philadelphia Hospital. Later it developed that there was a case of small-pox among them, and the chief medical inspector sent three physicians to the government detention station to vaccinate every person held there for examination.

SOUTH CAROLINA

Eyeglass Peddlers Convicted.—D. Copeland and S. Frieburg, charged at [illegible] obtaining money under false pretenses, [illegible] medicine in the state without first having procured a license, are said to have been found guilty and sentenced to serve one year in the chain gang. The defendants are said to have assumed the names of reputable physicians of Atlanta and Spartanburg. They have appealed their case to the supreme court of the state.

State Board of Health Bulletin.—The South Carolina State Board of Health is issuing an interesting series of bulletins for free distribution throughout the state, the first of which was on "Small-Pox, Its Control Suppression and Prevention," the second on "The Mosquito, The House Fly (*Musca domestica*), The Typhoid Fly," the third on "Typhoid Fever and How to Prevent It," the fourth on "Diphtheria and Scarlet Fever, Their Restriction and Prevention," the fifth on "Clean Milk in the Home," the sixth on "Hookworm Disease," the seventh on "Anterior Poliomyelitis (Infantile Paralysis)," and the eighth on "Tuberculosis."

Medical Society Election.—At the annual meeting of the Columbia Medical Society, held December 12, the following officers were elected: president, Dr. Skottowe B. Fishburne; vice-president, Dr. Henry W. Rice; secretary-treasurer, Dr. Mary R. Baker, and delegates to the state association, Drs. Augustus B. Knowlton and Pinckney V. Mikell.——Greenville County Medical Society held its annual meeting, December 5, in Greenville, and elected the following officers: president, Dr. Anthony White, Mauldin; vice-president, Dr. W. B. Sparkman, Greenville; secretary, Dr. Charles O. Bates, Greenville, and treasurer, Dr. R. W. Bruce, Greenville.

TENNESSEE

New Infirmary.—A new infirmary is to be erected in Chattanooga by Drs. Edward T. and E. Dunbar Newell, to cost $50,000. The institution will contain thirty-two rooms and will be fully equipped.

Three Hospitals in One Building.—Drs. William G. Bogart, John S. B. Woolford and Raymond Wallace have each leased an entire floor in the new Highland Apartments, Chattanooga, and will operate independent private hospitals.

Boyd Memorial.—Work has begun on the memorial arch which is to be erected by the Boyd Memorial Association in memory of the late Dr. John M. Boyd, Knoxville. The arch is to be built of Tennessee marble and will stand at the front of the court house.

Election of Officers.—The annual meeting of the Maury County Medical Society was held in Columbia, December 9. Dr. Horace E. Thomas, Columbia, was elected president; Drs. Henry O. Anderson, Williamsport, and James G. Williamson, Jr., Columbia, vice-presidents, and Dr. Maximilian M. Cook, Santa Fé, secretary-treasurer (reelected).

VIRGINIA

New College Building.—The trustees of the University College of Medicine, Richmond, have awarded contracts for a new college building, to cost $135,000, to replace the one recently burned. The new building will be erected on the site of the old college, will be of granite ashlar, red brick and cement construction, three stories and basement in height. The building will be ready for occupancy in about a year.

Personal.—Dr. R. Lindsay Robertson has been elected city physician of Charlottesville, vice Dr. Roy K. Flannagan, resigned to accept the position as state health inspector.——Dr. Joseph S. DeJarnette, superintendent of the Western State Hospital, Staunton, is ill with typhoid fever.——Dr. William A. Swimley, Winchester, was thrown from a street car in Washington recently and severely injured.——Dr. Robert C. Randolph, Boyce, is ill with typhoid fever in Winchester Memorial Hospital.

Elections.—The Southside Virginia Medical Association held its thirty-first annual meeting in Suffolk, December 13 and 14. The following officers were elected: president, Dr. J. Bolling Jones, Petersburg; vice-presidents, Drs. Edward R. Hart, Suffolk; William T. Moore, Valentine's; and H. M. Musgrove, Capron, and secretary-treasurer, Dr. Emmett F. Reese, Courtland. The spring meeting of the association will be held in Norfolk.——At the annual meeting of the Richmond Academy of Medicine and Surgery, December 13, the following officers were elected: Dr. George Ross, president; Drs. Alfred L. Gray, John S. Horsley, and Alexander G. Brown, vice-presidents; Dr. Mark W. Peyser, secretary (elected for the seventeenth term); Dr. William A. Shepherd, treasurer; Dr. George P. LaRoque, librarian; and Dr. William S. Gordon, chairman of the judiciary committee.

GENERAL NEWS

Interurban Academy Meets.—The annual meeting and banquet of the Interurban Medical Academy, composed of physicians of Duluth, Minn., and Superior, Wis., was held in Superior, November 23. Dr. Louis T. Pare, Duluth, was elected president; Dr. Thomas J. O'Leary, Superior, vice-president; Dr. Olin W. Rowe, Duluth, secretary-treasurer, and Dr. Luther A. Potter, Superior, censor for three years.

Seaboard Physicians Hold Meeting.—The fifteenth annual session of the Seaboard Medical Association of Virginia and North Carolina was held in Kinston, N. C., December 6-8, under the presidency of Dr. William T. Parrott, Kinston. The following officers were elected: President, Dr. Clarence Porter Jones, Newport News, Va., and secretary, Dr. J. Rainey Parker, Goldsboro, N. C. Newport News was selected as the place for the next meeting.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 9, 1910.

The Responsibility of Opticians

In this country a good deal of prescribing of spectacles is done by opticians, and a diploma in sight-testing has been instituted by a society composed of these persons. The medical profession has always objected to prescribing by opticians on the grounds that even if they can measure errors of refraction they are quite incompetent to diagnose or treat diseases of the eye, while the patients for whom they prescribe spectacles may be suffering from grave disease. A case hinging on this point has been tried. A woman, aged 23, sued a "qualified optician" (one with the diploma mentioned) for negligence in supplying spectacles and in examining and testing her eyes. She was a student studying science for a London degree and had passed all her examinations except the final one. She consulted the defendant's firm for her sight in 1907, 1908 and 1909. Her eyes were examined and tested and she was given two sets of spectacles. Eventually she sought medical advice and it was found that she was suffering from conical cornea, which permanently prevented her from continuing reading, and she became nearly blind. She asserted that if she had received proper advice from the defendant she would have consulted an oculist in time. She first went to him in September, 1907, and was seen by his assistant, who tested her sight and according to her evidence used an ophthalmoscope. He said that her defective sight was due to astigmatism and that with his glasses her sight would be good and she might in time be able to dispense with them. In the spring of 1908, she went again and complained that print appeared blurred. Her eyes were again examined and the glasses were changed without advantage. In November, 1909, she consulted an oculist, who said that conical cornea must have existed since she first consulted the defendant, and that any one with any knowledge of the eyes would have detected this and forbidden her reading, and that her sight would probably have been preserved or, at any rate prolonged, but that now it was too late and she was on the verge of blindness. Evidence to this effect was given by the oculist in question, who also said that the glasses prescribed were wrong and quite useless. The optician was examined and stated that he prescribed for the plaintiff by means of test-types and did not use an ophthalmoscope but might have used a plain mirror. Medical evidence was given for the defense that conical cornea was hard to detect in its early stages. The judge, in summing up, pointed out that the defendant was not a professional man, and that, therefore, no standard of skill was applicable to him. People ordered glasses as they did telescopes, at their own risk. An optician was bound to exercise reasonable care, and if he found some disease should refer the patient to an oculist. He did not think it was an optician's duty to detect diseases of the eye. After a long discussion the jury failed to agree.

Radium for England

Mr. Alton, director of the English Radium Institute, has bought from the Austrian Ministry 1 gm. of radium for $75,000. This purchase was made on behalf of the well-known Jewish philanthropist, Sir Ernest Cassel, who will present it to the institute. According to the eminent scientist, Sir William Ramsay, a gram of radium is a fifth of the entire quantity in the world. In a previous letter (The Journal, Nov. 5, 1910, p. 1658) an important discovery of pitchblende in Cornwall mines, which promise to be an even better source of supply than the Austrian, was announced. It is evident that the Radium Institute, which will soon be opened, will be well supplied with the precious metal.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Dec. 2, 1910.

Reorganization of the Service of Military Sanitation

In one of my previous letters (The Journal, March 12, 1910, p. 885) I mentioned the insufficient number of military physicians. The minister of war has presented a bill to increase them by 217. A counter-project has been presented to increase the proportion of positions of superior grade as well as the whole number of physicians. The condition from which the army surgical corps has b [illegible] is shown by the increasing number of [illegible] for early retirement, as well as by [illegible] in the number of candidates for the special schools of Lyons and Val-de-Grâce. The acuteness of this crisis is shown by the fact that in 1909, seventy-two military physicians resigned and there were only fifty-seven nominations. This year a *concours* at Val-de-Grâce for fifty-five places of *stagiaire* physicians brought together only thirty-one candidates. Evidently, an increase in the number of military physicians will require to be supplemented by increased chance of advancement.

An Epidemic of Trachoma

The lay press has created some stir over an epidemic of trachoma which appears to have been raging for some time in some of the arrondissements of Paris, and which is attributed to the influx of Jews and Armenians from Syria, Egypt and other Asiatic countries. Some have even gone so far as to propose the expulsion of these immigrants. This harsh measure seems not only inhuman but unjustifiable, for the importance of the epidemic has been exaggerated and, moreover, trachoma is endemic in certain parts of France, especially in the South. It would be far more rational to give hygienic instruction to those who come into contact with immigrants subject to trachoma.

Masseurs and the Illegal Practice of Medicine

The case of a masseur accused of practicing medicine contrary to law was recently before the courts. The defendant pleaded that in case of disease he sent the patient to a physician, and confined himself to practicing Swedish medicine. The prosecutor, however, brought out the fact that the defendant called himself a "Swedish gymnastic physician" and that on his cards were printed the names of diseases which the defendant treated, not as a masseur, but as a physician who gives fixed hours of consultation. The defendant, moreover, admitted that to know what part ought to be massaged it was necessary to examine the patient; this implied a diagnosis and a line of treatment. A newspaper, moreover, related the marvelous cures which the defendant was said to have made on patients whom physicians had declared incurable. The court found him guilty of illegal practice of medicine and fined him $20 (100 francs).

International Agreement in Regard to Industrial Accidents

An agreement has been signed between France and Great Britain intended to assure to the citizens of each country the reciprocal benefit of the legislation in force in the two countries in regard to the payment of damages by industrial accidents. A similar agreement was concluded some years ago between France and Italy.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Dec. 1, 1910.

The Kaiser on Temperance

At the opening of a naval academy a few days ago, the emperor addressed the cadets and advised them to avoid the use of alcohol and to join the Good Templars. He said that the next war would demand healthy men and that victory would be on the side of that nation which showed the smallest consumption of alcohol. So at least the papers reported; whether it literally accords with what the emperor said, I doubt. At least it may be assumed that the Kaiser, who also sometimes on social occasions likes "a good drop" (*einen guten Tropfen*) himself, did not intend to advise general abstinence. Nevertheless the teetotalers will undoubtedly quote the Kaiser's speech to support their arguments.

Proposed Abolishing of Brothels in Baden

As a result of a petition of the Baden Women's Associations (*Frauenvereine*), the Baden national assembly (*Landtag*) has voted a resolution to close all the present houses of ill fame in the grand duchy and that no more new ones be established; that appropriate measures be taken by the government for combating prostitution and restricting it as far as possible, and especially for the suppression of street prostitution, and that all the efforts of societies and individuals to this end be sustained as far as possible. In the preparation for the discussion of the preliminary bill for the new criminal code and the proposed legislation by the imperial upper house (*Bundesrath*) for the regulation of prostitution, the government is asked to have the entire question of prostitution submitted to an expert commission, assisted by capable women. The commission shall especially investigate the questions: 1. Whether the present form of *réglementation* cannot be replaced by another form of supervision of prostitution which will not make it so difficult for the victim of prostitution to return to an honest life. 2. Whether measures following the model of the Danish law of March 16, 1906, are not to be recommended against the constantly increasing venereal diseases. The government is further asked to make provision in the next budget for the installation of female assistants to the police in the large cities. The question of the protection of waitresses in saloons is also one to be thoroughly investigated and it is to be determined what further measures of protection, especially for young persons, ought to be introduced into the imperial trade regulations. As the government is opposed to abolition of segregation, it is very questionable whether the resolution passed by the *Landtag* will have any actual results.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Dec. 24, 1910.

Woodson, Thomas D., lieut., December 1, granted thirty days' leave of absence.

Long, Charles J., D.S., December 19, ordered to proceed to Forts Constitution, N. H.; Williams, Me., and Ethan Allen, Vt., for temporary duty.

Scott, Harold O., D.S., December 19, ordered to proceed to Forts Totten, N. Y.; Monroe, Va.; Myer, Va., and Washington Barracks, D. C., for temporary duty.

Leeper, John F., M.R.C., December 16, granted thirty days' leave of absence about Jan. 1, 1911.

Cullen, Charles W., M.R.C., December 16, ordered to proceed from Fort D. A. Russell, Wyo., to Fort Duchesne, Utah, for temporary duty.

Foster, George B., Jr., lieut., December 16, ordered to Washington Barracks, D. C., for temporary duty.

McAndrew, P. H., major, December 16, left Fort Terry, N. Y., on ten days' leave of absence.

Tetrault, Charles A., M.R.C., December 17, reported for temporary duty at Fort Terry, N. Y.

Chambers, William H., D.S., December 19, left West Point, N. Y., on two months' leave of absence.

Thomason, Henry D., captain, December 20, granted thirty days' leave of absence.

Gunckel, George I., D.S., December 19, left Fort Oglethorpe, Ga., on thirty days' leave of absence.

Leslie, Samuel H., D.S., December 19, reported for temporary duty at Fort Riley, Kan.

Conner, Dillis S., M.R.C., December 20, resignation accepted, to take effect at date.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Dec. 21, 1910.

Pettus, W. J., asst. surg.-gen., directed to proceed to Baltimore and make inspection of the operations of the service at that port; granted five days' leave of absence from Dec. 27, 1910.

Carter, H. R., surgeon, directed to proceed to Evansville, Ind., and make inspection of the operations of the service at that port.

Lumsden, L. L., P. A. surgeon, directed to proceed to Des Moines, Iowa, and confer with the secretary of the state board of health relative to an outbreak of typhoid fever.

McLaughlin, A. J., P. A. surgeon, directed to proceed to Buffalo, N. Y., via Albany, N. Y., on special temporary duty; granted five days' leave of absence en route.

Brooks, S. P., A. A. surgeon, leave of absence granted for seven days from Dec. 12, 1910, amended to read nineteen days from Dec. 13, 1919.

Cleaves, F. H., A. A. surgeon, granted six days' leave of absence from Dec. 24, 1910, under paragraph 210, Service Regulations.

Hart, G. G., A. A. surgeon, granted eleven days' leave of absence from Dec. 20, 1910.

Hume, Lea, A. A. surgeon, granted ten days' leave of absence from Dec. 13, 1910.

Tappan, J. W., A. A. surgeon, granted ten days' leave of absence from Dec. 17, 1910.

Limits to the Advance of Science.—In a study of American men of science, J. McKeen Cattell (*Science*, Nov. 4, 1910) says that a man of genius is likely to do his best work at an early age and to receive prompt recognition. "Kelvin was appointed full professor at Glasgow at 22, Thomson at Cambridge at 26, Rutherford at McGill at 27. Men of science of this age and rank simply do not exist in America at the present time; . . . the number of scientific men of standing is only about one-half so large as the increase in the population of the country. . . . Racial senescence, the lack of emotional stimuli, and the accumulations of knowledge will probably set limits to the further advance of science. In the presence of racial senescence we should be entirely helpless, but it is possible that there is no such thing. Twenty years ago the Chinese were called a senile race, but such a statement could not be justified to-day. In a way our stock is as young as any, and the germ plasm may increase as much in complexity as it has since the ameba. Still a highly specialized organism is likely to become unplastic and extinct, and apart from physical exhaustion of the stock there is likely to be a social senescence. This is closely related to the lack of emotional stimuli. Great men and great achievements are likely to be associated with national excitement, with wars, . . . and the like. Such stirring events will probably disappear from the world civilization of the future, and it may be impossible to devise artificial stimuli adequate to arouse men from a safe and stupid existence. But exactly because within a century the great achievements of science may belong to the past, where the great creations in poetry, art and religion may perhaps now only be found, it is our business to do the best we can to assure the race of an adequate endowment."

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SIGNIFICANCE OF LARGE VACCINATION SCARS

To the Editor:—1. Of what value, as evidence of successful vaccination, is a large and distinct scar?

2. Is it probable that most of the unfavorable conditions and large scars following vaccination are due to infections other than the vaccine virus? EUSTACE LONG, Madison, Fla.

ANSWER.—1. The size of the scar is of itself no positive evidence of successful vaccination. The size may be due to the severity of associated infection. What is characteristic of successful vaccination is the minute depressions in the scar.

2. It is probable that most of the unfavorable conditions following vaccination are due to infections of a mixed character, but it seems to be true that an active though pure vaccine virus may sometimes produce extensive inflammation and large scars.

DIFFERENCE BETWEEN GERMICIDE AND ANTISEPTIC

To the Editor:—Please state briefly the difference between a germicide and an antiseptic. In what way does a non-germicidal antiseptic relieve infections such as are met in out-patient work? W. I. CLARK, Worcester, Mass.

ANSWER.—A germicide is a substance or agent which destroys microorganisms so that they will not grow when placed in appropriate culture media. An antiseptic is a substance which hinders or prevents the growth of microorganisms but does not necessarily destroy their vitality. Organisms which have been treated with non-germicidal antiseptics will grow in appropriate culture media if the antiseptic is thoroughly removed Non-germicidal antiseptics may stimulate the tissues, so as to render them more active in resisting infection.

HARRINGTON'S SOLUTION FOR HAND ASEPSIS

To the Editor:—Can you give me the formula for making Harrington's antiseptic solution? P. F. DODSON, Wilber, Neb.

ANSWER.—Harrington's solution consists of commercial alcohol (94 per cent.), 640 c.c.; hydrochloric acid, 60 c.c.; water, 300 c.c.; corrosive sublimate, 0.8 gm. It is intended for hand disinfection. The hands and arms should first be thoroughly washed with sterile soap and hot water and then bathed in the solution for half a minute or longer.

Book Notice

SYMPTOMATIC AND REGIONAL THERAPEUTICS. By George Howard Hoxie, M.D., Professor of Internal Medicine and Dean of the Clinical Department in the School of Medicine of the University of Kansas. Cloth. Price, $4. Pp. 499, with 58 illustrations. New York: D. Appleton & Co., 1910.

In the preface the author says that this book contains the material recommended by the Committee on Curriculum of the American Medical Association and by a similar committee of the Association of American Medical Colleges for the college course in therapeutics. It is divided into three parts: the first is devoted to symptomatic therapeutics; the second to regional therapeutics or therapeutics of lesions or diseases; and the third to notes on remedies. The first part is the most satisfactory and the last the least so.

The individual chapters are not so carefully planned as they might have been. For instance, in the one devoted to pain, local treatment is first described, then drug treatment; and following that section is one devoted to "other drug treatment." But under the last head a page is devoted to local treatment again. The chapter devoted to the nature of fever is not explicit enough, and the methods of giving baths in typhoid and other fevers are not described with sufficient fulness. Certainly a student could not learn from the description precisely how, when, or for how long a time the bath can be best given. Nor are these facts brought out further on in the book when typhoid is specifically discussed. The description of asthma occupies only part of a page, and for a work devoted to treatment the discussion of the subject is unsatisfactory.

For the undergraduate, for whom the book is said to be intended, it is not detailed enough. Many subjects are so treated that one feels pleased, but not quite satisfied, with what one has read. In particular, too little is said of just how individual drugs and remedial procedures do good when prescribed for symptoms or diseases; and not enough pains are taken to point out exactly when they should be used in a given disease, for it is rare that any one remedy is useful or best throughout the course of a disease. The notes on remedies are most unsatisfactory, for they do not discuss fully either the mode of action or the pharmacology; and these are subjects on which the student should be well informed. Drugs are included which are of little or no value, while insufficient space is given to the more important ones.

However, in spite of the defects to which we call attention, the book on the whole is commendable; it will be useful to practitioners who desire to refresh their memories of this subject and to bring their practical knowledge up to date.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

December 17

1 Rhinolaryngology and Its Relation to General Medicine. H. Arrowsmith, Brooklyn.
2 *Etiology of Poliomyelitis. F. Proescher, Pittsburg.
3 Endemic Poliomyelitis. W. S. Bryant, New York.
4 Congenital Hypertrophic Stenosis of the Pylorus. R. Harrison, Philadelphia.
5 Mixed Cell Sarcoma of the Pituitary Body. M. O'Malley, Washington, D. C.
6 Froehlich's Syndrome in Cases of Pituitary Tumor. R. Ottenberg, New York.
7 *Spontaneous Appearance of Indigo Blue in the Urine. A. L. Benedict, Buffalo.
8 Insufficient Pylorus. B. Frankel, New York.
9 Magic and Medicine. J. Knott, Dublin, Ireland.

2. Etiology of Poliomyelitis.—A peculiar kind of micro-organism was found by Proescher in a fatal case of poliomyelitis, with the usual well-known lesions of the spinal cord. Microscopically, perivascular infiltrations, hemorrhages, and degenerations of the ganglionic cells were found throughout the spinal cord. To confirm the diagnosis, a monkey was inoculated into the right paracentral convolution, and into the peritoneal cavity, with an emulsion made from various parts of the spinal cord and brain. The animal recovered from the operation and an hour later appeared in a normal condition. No change occurred during the next six days, but on the seventh day a marked ptosis of the left eye developed so that the lifting up of the eyelid became difficult. The temperature ranged from 103.2 F. (normal temperature) to 105.4 F. In other respects the animal seemed well and had normal appetite. The ptosis lasted for three days, when it disappeared, and was followed on the morning of the twelfth day after inoculation by a complete paralysis of the left leg. The movements of the right leg and both arms were normal and no other clinical signs were noted. Temperature, 102.3 F. Daily examination of the blood showed a relative lymphocytosis. On the sixteenth day after inoculation the animal was killed, and the postmortem showed no macroscopic changes in the brain or cord, except a slight hyperemia and edema of the lumbar section. Internal organs were apparently normal. The microscopic examination of the cord and brain, gave the same lesions as found in the nervous system of a child. Smears were made from the fresh cord, hardened in bichloric alcohol, subjected to the action of dilute Lugol's solution and of sodium thiosulphate and stained by Mann's method. Peculiar cell inclusions, resembling Negri bodies, and also parasitic formations similar to protozoic bodies, were found. In regard to the true nature of parasitic inclusions, no explanation at present seems available.

7. Indigo Blue in Urine.—After the administration of benzoic acid in a proprietary mixture, the urine was of a peculiar brownish-green color. On adding chloroform, the blue was extracted, and, from the correspondence with previous and subsequent indican tests, the difference in tint from anilin cases and the exclusion of adventitious and dietetic causes of coloration, was regarded as indigo. The impure brownish-green color of the urine before shaking with chloroform was regarded as the mixture of indigo with the ordinary yellowish-brown pigment, the urine containing a uratic deposit. It is suggested by Benedict that the benzoic acid may have acted as an oxidizing agent both in this case and in various others in which spontaneous passage of blue urine has been noted.

Lancet-Clinic, Cincinnati

December 10

10 Headache. A. C. Carney, Hamilton, Ohio.
11 Office Treatment of Antral Disease. W. W. Pennell, Mount Vernon, Ohio.
12 Diagnosis of Obstruction of the Bowel. C. T. Souther, Cincinnati.
13 Cause of Glaucoma. F. W. Davis, Cincinnati.
14 Surgery in the Private Home. C. A. Langdale, Cincinnati.

Boston Medical and Surgical Journal

December 15

15 Phylogenetic Association in Relation to Certain Medical Problems. G. W. Crile, Cleveland.
16 *Tuberculosis Problem as Applied to Children. J. B. Hawes, Boston.
17 Therapeutics of Light. H. McIntosh, Boston.
18 Extraperitoneal Cesarean Section. J. L. Huntington, Boston.

16. Tuberculosis Problem as Applied to Children.—As an outline for future work of anti-tuberculosis societies, Hawes suggests the following: 1. Every effort should be made to get the state and local authorities to provide adequate facilities for the care of children with pulmonary tuberculosis. One effective way of doing this is to make application for the admission of all such cases to the state sanatoria. The strongest argument which the board of trustees of the state sanatoria can use before the legislature is a long list of applications from children for whom there is no place, nor for whom, with the present appropriation, can a place be provided. 2. Earnest and intelligent cooperation with the local school board to provide an outdoor school or fresh-air room for pre-tuberculous children; if such a school or room is established, the attention of the city legislature and board of health should be called to the good which it does. 3. It should be insisted on that the terms of the 1908 act, that "tuberculosis and its prevention shall be taught in our public schools," etc., be complied with. This can best be done by means of tuberculosis exhibits prepared along the line of those now loaned by the state, placed in all the public schools, and demonstrated wherever possible by physicians, nurses or social workers.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Indian Medical Gazette, Calcutta

October

1 The Operation Theater. P. C. Gabbett.
2 Organization and Management of Abdominal Operations. R. F. Standage and G. G. Giffard.
3 Treatment of Acute Peritonitis and Other Conditions Associated with Grave Shock. C. C. Barry.
4 *Sterilization of Skin by Iodin. A. F. Hamilton.
5 Surgery of the Female Pelvic Organs and Structures. H. P. Dimmock.
6 Appendicitis. C. Stevens.
7 Tumors and Intestinal Obstructions. E. O. Thurston.
8 Operations for Hernia. W. J. Niblock.
9 Septic Phlebitis of the Spermatic Cord. R. Bird.
10 Surgical Treatment of Tuberculosis. L. P. Stephen.
11 Penetrating Wounds of the Abdomen Illustrating the Recuperative Power in Natives of India. L. G. Fischer.
12 *Treatment of Senile Enlargement of the Prostate and Acute Inflammation of the Prostate. H. Smith.
13 *Ideal Operation for Fistula in Ano. S. C. Evans.
14 Operative Treatment of Hydrocele. C. Hudson.
15 Treatment of Stricture of the Urethra and of Fistulæ. P. C. Gabbett.

4. Sterilization of Skin by Iodin.—Hamilton has used an alcoholic solution of iodin in water in over seventy cases with good results. A few minutes before the patient is brought to the table the field of operation is thoroughly painted over with the solution and allowed to dry. Immediately anesthesia is complete a second coating is given and then the operation is commenced. On the completion of the operation the line of sutures is lightly painted over with the same solution.

12. **Treatment of Senile Enlargement of Prostate.**—Smith makes a crescentic wound from tuber-ischium to tuber-ischium with its convexity about an inch in front of the anus. He separates the anus and lower part of the rectum from the distal or penile half of the prostate. With a median staff in the bladder, take the staff in one hand and turn it so that its groove will be postero-lateral, into which pass the knife at the apex of the prostate and on into the bladder, making a lateral incision. Then turn the staff to look postero-lateral in the opposite direction and make a corresponding cut in the other side: so that the v-shaped tongue left by the junction of these two cuts will have in it the median septum and the termination of the seminal ducts which would thus be out of the way and out of danger. Then pass a finger into the capsule of the prostate in one side and enucleate it by working around it from the lateral aspect and finishing by enucleating that lateral half from the urethra and posterior septum. Repeat the process with the other lateral half. If there is a median lobe deal with it directly. By this method one need not injure the anterior part of the urethra or the seminal ducts. All bleeding points can be caught with forceps and twisted in proper surgical fashion, as they are visible. Proper drainage is secured, and the wounds heal up as quickly as in an ordinary lateral lithotomy and the results are good.

13. **Operation for Fistula in Ano.**—The patient is placed in the lithotomy position with the buttocks well over the end of the table. The sphincter is dilated in the usual way and the rectum douched out with sterile normal saline solution or weak biniodid. Beginning at any convenient external opening the main fistula and all lateral diverticula beyond the limits of the sphincter are laid freely open. Any prominent vessels are now picked up, the surface dried and attention directed to the anal end of the gaping wound. This corner must be explored with the greatest pains and with the greatest gentleness, with probes of diminishing size, until the rectal opening, or, when none exists, the summit of the fistula is discovered. Great care should be exercised at this stage lest the probe, infected from the main tract, be thrust into healthy tissues. The probe is followed by a director and the fistula laid open in such a manner as to divide the sphincter in a radial direction. The incision involves the mucous membrane of the rectum up to the internal opening or, where no such opening exists, to the level of the summit of the tract. A few bleeding points now need picking up.

The next step is to remove all diseased tissue. With a sharp scalpel (the knife must be sharp) a v-shaped piece is cut out of the bottom of the gutters left by splitting open the fistula and its ramifications in such a manner as to remove all granulation tissue. The section leaves a clean white shiny surface dotted with minute bleeding points. Any undiscovered diverticula are indicated by small dark patches of granulation tissue. These are similarly laid open and their lining excised. As soon as the granulation tissue lining the main tract is cut away lateral ramifications at once become evident. Attention is now turned to the skin and all thin, discolored and diseased overhanging portions are trimmed away with scissors or knife. The next step is to close the somewhat irregular and usually extensive wound with sutures. The material used is silkworm gut. The left forefinger is introduced into the rectum. The needle is entered at the anal margin on one side of the wound, is made to transverse the sphincter and run just beneath the mucous membrane of the rectum, till the summit of the wound is passed. The instrument is then grasped in the full of the hand and its direction forcibly altered in such a manner as to cause the point to travel round the apex of the wound and along beneath the mucous membrane of the rectum till it emerges at the anal margin on the opposite side. A series of stitches are introduced in this way. The first three are placed close together so as to bring the tissues in the sphincter region into accurate opposition. The remainder need not be quite so close, but great care must be taken to bring the sides of the entire wound into continuous contact. There must be no cavities where blood can collect. All the stitches are introduced before being tied. A double twist is preferable to a knot especially in the neighborhood of the anus, as there is always, when the time comes for removing the stiches, considerable difficulty in getting the point of a pair of scissors under the loop; the proceeding, moreover, is very painful. The ends of all sutures are left long to avoid the irritation of sharp wiry points, are tied up in one or more convenient bundles, and are wrapped up in iodoform gauze. A morphin and iodoform suppository is introduced into the rectum, the wound dusted freely with iodoform and boric acid and dressed with a pad of wool and a T-bandage. The patient's knees should be fastened together and his bowels kept confined with small doses of opium for four days. The results of the operation in Evan's experience are excellent—six failures out of 107 cases.

Journal of Obstetrics and Gynecology of the British Empire, London

November

16 Hematoma of the Ovary. J. P. Hedley.
17 Results of Wound Healing and Mortality Rate of 156 Consecutive Laparotomies. G. B. Marshall.
18 Spontaneous Separation of the Symphysis Pubis. F. M. Huxley.
19 Acute Appendicitis within Ten Hours After Delivery. J. W. Ballantyne.

Journal of Tropical Medicine and Hygiene, London

November

20 Investigation of Pellagra. L. W. Sambon.

Annales de l'Institut Pasteur, Paris

October, XXIV, No. 10, pp. 753-831

21 *Intestinal Poisons and Arteriosclerosis. (Etudes sur la flore intestinale. II.) E. Metchnikoff.
22 Inherited Soil and Tuberculosis. (L'hérédo-prédisposition tuberculeuse et le terrain tuberculisable.) A. Calmette.
23 Parasitic Origin of Cancer. (Parasitisme et Tumeurs.) A. Borrel.
24 Relations Between Natural and Artificial Oxydasic Phenomena. J. Wolff.
25 Latency of Rabies Virus in the Nerve Centers. P. Remlinger.
26 Action of Small Intestine on Microbes. E. Wollman.
27 Experimental Research on Tuberculosis of the Bladder. M. Breton.
28 Experimental Chemotherapy of Tick Fever. (Contribution à la chimiothérapie de la "Tick-fever" avec "606" et la couleur de benzidine.) W. L. and N. K. Yakimoff.

21. **Arteriosclerosis and Intestinal Poisons.**—Metchnikoff has continued his research on the poisons generated by the ordinary bacteria in the intestines, and believes that his experiments have now established beyond question that small doses of paracresol and indol, acting on the organism over a longer or shorter period, are capable of inducing chronic lesions of the nature of sclerosis. Such lesions are the very ones that are most frequently encountered in senility. His latest experimental and chemical research further demonstrates, he states, that the phenols and indol found in the stool and urine are not the excreta of our tissues, but are the products of the permanent microbian flora. It is not unreasonable to assume, he declares, that the digestive tract can constantly harbor an injurious flora, the source of chronic poisoning leading to arteriosclerosis; helminths are so frequent among certain primitive peoples that they may almost be regarded as the normal "physiologic" fauna, and yet they are liable at any moment to entail more or less serious disturbances. Mathis and Leger announced last year that they found helminths in every native examined in Indo-China. It is established now beyond question, he continues, that the *Bacillus perfringens* and the colon bacillus produce poisons which can be absorbed by the normal walls of the intestines and are capable of inducing serious lesions in vital organs, arteries, kidneys, liver, etc. He then discusses how to prevent this injurious action from the poisons thus engendered in the intestines. These same lesions occur in the horse and rabbit, which eat no meat; consequently, a meat diet cannot be the main cause, and experiences are showing that with a mixed diet there is really less production of these poisons. On the other hand, it seems to be possible to check the production of indol by these bacilli by fighting them with certain other bacilli, especially lactic-acid bacteria. The simultaneous presence of Bulgarian lactic-acid bacilli in a culture medium with the colon bacilli seems to render it impossible for the latter to attack the nitrogenous elements in the medium, and hence there is no production of substances of the aromatic series. Metchnikoff reiterates that it is on this principle of letting

Greek fight Greek that we may hope to find the solution of the problem of the suppression of the poisons which are responsible for the development of the sclerosis in our organs, and consequently of their premature wearing-out. (Metchnikoff's previous work in this line was reviewed to date in The Journal, March 19, 1910, page 970.)

Archiv für klinische Chirurgie, Berlin

XCIII, No. 3, pp. 557-789. Last indexed November 19, p. 1850

29 *Treatment of Dangerous Gastric Hemorrhage. (Zur Behandlung der lebensgefährlichen Magenblutungen.) L. Kraft.
30 *Operative Treatment of Stab Wounds of Diaphragm. (Stichverletzungen des Zwerchfells.) M. Magula.
31 *Instrumental Stretching of the Enlarged Prostate. C. Bayer.
32 Relief of Flat-Foot by Exclusion of Achilles Tendon. (Erfolge mit der Ausschaltung der Achillessehne beim schweren Plattfuss nach Nicoladoni.) J. Hertle.
33 Healing of Experimental Heart Wounds. (Heilungsvorgänge bei Herzwunden und nach Herzwandresectionen.) R. Göbell.
34 *Experiences with Rhinoplasty. N. Wolkowitsch.
35 Subcutaneous Ruptures of Stomach or Intestine. (Zur Pathogenese der subcutanen Magen-Darmrupturen.) E. Haim.
36 *Hernia of Anterior Abdominal Wall. (Zur Pathologie und Therapie der Brüche der vorderen Bauchwand.) W. Denk.
37 *Treatment of Recent Fracture of Long Bones. (Zur Behandlung frischer Diaphysenbrüche.) O. v. Frisch.
38 *Suggestion for Operative Correction of Fracture of Leg and Forearm. (Vorschlag zur blutigen Einrichtung der Unterschenkel- und Vorderarmbrüche.) P. Clairmont.
39 Experimental Callus Production Under Fibrin Injections. S. Bergel.
40 Extensive Resection of Intestine. (Ausgedehnte Darmresection.) H. Miyake.
41 Endothelioma of Submaxillary Gland. G. Bolognesi.

29. **Treatment of Dangerous Gastric Hemorrhage.**—Kraft refers to severe hemorrhage from gastric ulcer, and cites statistics to show that this occurs in from 1.1 to 11.6 per cent. of all cases of gastric ulcer, while minute hemorrhage is encountered in about 75 per cent. The rarity of operative interference is due to the unsatisfactory technic hitherto, the outcome seldom answering anticipations, Kraft states, but, he continues, all this has been changed by Rovsing's method of direct diaphanoscopy and gastroscopy, the light introduced through a minute incision in the stomach wall. This has made the surgeon the master of the situation and has revolutionized the prognosis. (The technic was described in The Journal, Aug. 22, 1908, page 713.) Kraft has applied it in five cases; all the patients were cured at once, with the exception of one who was fatally injured by accidental short-circuiting of the electric current before the technic had been fully mastered. The diaphanoscopy permits exact knowledge of the source of the hemorrhage, and it is then readily obliterated by running a suture thread around it. The patients were prepared with saline infusion (1,000 c.c.) an hour before the operation; camphor and strophanthin were never given, as he thinks they render more of the anesthetic necessary. An injection of 200 c.c. of a 5 per cent. gelatin solution was made in a few cases, but no benefit from it could be detected. Immediately before the operation the stomach was cleaned out as completely as possible. If this has to be done during the operation it increases the operative risks. He has never found that lavage of the stomach increased the bleeding.

30. **Stab Wounds of the Diaphragm.**—Magula reports his experiences with operative treatment in sixty-one cases of stab wounds of the diaphragm at St. Petersburg. He has been able to find only 129 similar cases on record. Only twenty-five of his cases were without concomitant injury of other internal organs. The wound in the diaphragm was not diagnosed in 41 per cent. of the cases; in 9.7 per cent. the stab had been received in the fourth and fifth interspace. The danger of diaphragmatic hernia is so great as also the possibility of unsuspected injury of other organs that expectant treatment is contra-indicated. In case it proves impossible to suture the wound in the diaphragm, the lips of the wound may be sutured to the costal pleura as Frey has suggested. This prevents hernia and also danger of secondary infection of the pleural cavity.

31. **Stretching the Passage Through the Enlarged Prostate.**—Bayer has been advocating for some time instrumental dilatation of the prostatic portion of the urethra for difficulty in urination from chronic non-malignant enlargement of the prostate. The measure is particularly adapted for debilitated elderly patients, as it is so simple and harmless, and he reports complete success with it in five out of eleven cases and material improvement in two other cases. Only one of the patients has required prostatectomy since, after a period of transient improvement. The outcome in the other cases is not known, except that one patient has died from other causes. He uses a curving instrument like a lithotrite, except that one branch is made hollow to permit irrigation through it. The other branch fits over the first and by turning a thumbscrew the curving tip of the second branch slides along on the first branch, the curving tips thus separating, although remaining parallel. The separating branch exerts pressure toward the rectum, stretching the prostatic urethra in this direction. After the part has been stretched, he closes the instrument and flushes the region through it with *iodoform-glycerin* to aid in healing any slight lesions that may result from the dilatation. He has applied the instrument also in three quite recent cases. The dilatation may be repeated after a few weeks or months, if necessary.

34. **Restoration of the Nose.**—Wolkowitsch reports a number of rhinoplastic operations; in two of them he made the new nose out of the patient's fourth finger, as he describes in detail. The first case dates from 1896. His experience, he thinks, encourages further work in this line, as also with the Italian method of rhinoplasty which was applied in the other cases.

36. **Hernia in the Anterior Abdominal Wall.**—Denk urges operative treatment as early as possible, as the hernia is liable to increase with delay and with it the danger of recurrence. A plastic operation is the only reliable technic and catgut should be used for ligatures, as *primary* healing is indispensable. These conclusions are based on 135 operative cases at von Eiselsberg's clinic at Vienna, 1901-1910. In thirty other cases of the kind an operation was contra-indicated or refused. The technic preferred is described in detail and illustrated; the outcome was a permanent cure in 76.8 per cent. in the ninety-five cases followed to date, which he compares with the outcome in fourteen other clinics. There had been stitch-hole abscess in half of the twenty-two cases with recurrence, and drainage had been necessary in most of the other recurring cases.

37. **Treatment of Recent Fracture of Long Bones.**—Among the measures advocated by von Frisch is one to be applied when apparently unconquerable contraction of the muscles prevents apposition of the stumps after a transverse fracture. He shows by illustrations that if the lapping stumps are bent outward, at an angle of about 125 degrees, the contracting muscle on their inner side becomes slackened. It is then a simple matter to manipulate into apposition the inner edge of the two stumps thus meeting at the above angle of about 125 degrees. Then by pulling on the farther ends of the bones to bring the whole into a straight line, the inner edge of the stumps in apposition serves as a lever which brings the rest of the stump into apposition in spite of the opposition of the muscle. The very inequalities of the cleft ends of the stumps make them grip each other with a firmer hold, and the contraction of the muscle then serves to hold them immovably in contact. It is in this class of cases that extension is almost certain to fail, while the simple maneuver described rights conditions at one stroke and very little callus production follows. The manipulation is done after a few whiffs of ether—primary ether anesthesia—or in general anesthesia. The arm is placed in supination and then the hand is drawn toward the side to which the distal fragment projects, dorsal or ventral, while the surgeon's fingers manipulate the stump ends in the angle thus formed, pushing them into correct apposition. If the reduction is correctly done, the arm can be rotated afterward without danger of displacing the stumps again.

38. **Treatment of Fracture.**—Clairmont has found it possible to reduce certain fractures by introducing a retractor through a small incision and pulling the dislocated stumps into correct apposition with the instrument. In a case described, the fracture of the forearm was 13 days old and this little operation, after failure of bloodless reduction, answered the purpose admirably, as also in a case of fracture of the leg.

Medical Economics

West Virginia Adopts Medical Defense

At the annual meeting of the West Virginia State Medical Association, Dr W W Golden, chairman of the Committee on Medical Defense, presented a report, reviewing the history of cooperative medical defense and recommending changes in the by-laws to make it operative in West Virginia

After stating that it was the conviction of the committee that, in time medical defense would become a permanent feature of every state medical organization, the advantages of cooperative medical defense were outlined The committee held that any physician was liable to become the defendant in a suit for alleged malpractice at any time, the general practitioner being just as liable as the specialist, and the physician at the cross roads as the city doctor It consequently behooves all to take precautionary measures In most malpractice suits the trouble originates with some misguided and jealous fellow practitioner Consequently, the ideal prophylaxis is to be found in a more effective dissemination of the principles for which the medical organization stands Liability companies furnish protection to physicians at a very handsome premium, binding themselves to pay the amount of judgment up to a certain sum, as well as the expenses of the suit As most of the suits brought are for blackmail or for the purpose of offsetting the physician's bills, verdicts are not often found against physicians The committee regards the rate charged by liability companies as needlessly high, and states that members of the Wisconsin State Medical Society, for instance, get practically as good protection for $1 per year as that for which liability companies doing business in the state charge $15 The adoption of medical defense by the state society has invariably been followed by a marked diminution in the number of malpractice suits, not so much through the effect on the lawyer and the prospective plaintiff as on the "medical culprit" who is instigating the prosecution and whose sole object is persecution Again, should the policy holder be so unfortunate as to have more than one law suit brought against him in a short period, the liability company may take advantage of its right to cancel his policy The committee points out, however, that there is nothing in the adoption of medical defense by the state society to prevent those physicians who so desire from carrying personal liability policies in addition

The chief advantage of cooperative defense is that it enables all of the members of the state society to unite in securing the services of a competent attorney, who having all of the business of the state society, can afford to devote enough time to this subject to become proficient in it Those who have had experience with malpractice suits know that even the best lawyers are but little informed on the subject As has been frequently pointed out, the law of malpractice is almost entirely a law of court decisions rather than of statutory enactments An attorney, no matter how able, is at a disadvantage in defending a suit if he is not thoroughly familiar with the precedents and decisions on this subject This is particularly true of prominent and busy lawyers, as the demands on their time make it impossible for them to become thoroughly familiar with the law in the case The most important feature of cooperative medical defense by the state society is that such a provision makes it possible to retain a competent attorney who by constant application can in a short time become thoroughly familiar with the law It is not expected that one attorney would personally try all of the suits, but his advice and assistance to local attorneys would be of the greatest value As the committee well says, "this feature alone makes the adoption of a plan for medical defense highly desirable and the amount of $1 per year is certainly a small sum to pay for such a benefit"

The report discussed the value of this feature in attracting and holding members, and presented the necessary amendments to the by laws They provide for a committee on medical defense, composed of the members of the state council and three members especially elected for this purpose, the three members to constitute the executive committee. The executive committee is to select an attorney to look after the interests of the members of the state association One dollar per year is assessed against each member to defray the expenses of the committee on medical defense. No suits are to be defended based on acts committed prior to Jan 1, 1911, or prior to the date of qualification of the physician as a member of the association Only members in good standing are entitled to the privileges of medical defense.

The adoption of this feature by the West Virginia State Medical Association will greatly enhance the value of membership and will be productive of much good in that state, as it has in others

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POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR JOHN H BLACKBURN, DIRECTOR
Bowling Green, Kentucky

Fifth Month—Fourth Weekly Meeting

II Inflammations of the Skin (Continued)

Dermatitis Dermatitis traumaticus, d calorica, d venenata, d medicamentosa, d gangrenosa Etiology and diagnosis of each More frequent drug eruptions

Tinea Trichophytina Small and large spored fungi Incidence *Tinea circinata, tonsurans, sycosis, cruris, unguium.*

Tinea Favosa. Tinea Versicolor Clinical and microscopic diagnosis of each Treatment in detail

Scabies Etiology, diagnosis, treatment

Pediculosis Varieties, diagnosis, treatment

III Hemorrhages of the

Purpura· Purpura simplex, p rheumatica, p hemorrhagica. Etiology and diagnosis

IV Hypertrophies

Ichthyosis Simplex, and hystrix Symptoms and diagnosis

V Atrophies

Alopecia Congenital, senile or premature alopecia Premature alopecia (a) idiopathic, (b) symptomatic Etiology.

Alopecia Seborrhoica Diagnosis, treatment

Alopecia Areata Diagnosis, treatment

Monthly Meeting

Diagnosis and Treatment of Psoriasis
Etiology and Treatment of Urticaria
Diagnosis and Differentiation of Eczema

Pharmacology

Slovenly and Shotgun Prescribing

A physician sends us the following letter as a contribution to the subject of the need of more careful prescription writing·

"A druggist showed me a prescription by one of the most prominent physicians in a neighboring city who long held a professorship in a leading medical school After turning the prescription in such a manner as to hide the writer's name, he permitted me to copy it, and I here reproduce it, preserving spelling and capitalization

℞	Terpin hydrate	gr xxx
	Quinia Sulphat	gr xx
	Heroin —	gr iss
	Pulv Nucis vomicae	gr vi
	Guaiacol Carb	gr xlv
	Ammoniae Muriat	ʒi
	Protonuclein	ʒi

M Fiat capsules No XX Sig One after meals

"Questions Why begin hydrate with a lower case letter, muriate with a capital? Presumably the dash after Heroin was to fill the line, or, did he wish the sulphate? Why Quinia, but Ammoniæ? Even granting that protonuclein has a remedial action when given separately, would it have any influence in such a combination? (The manufacturer's representative informed me that it was doubtful) Why Ammoniæ Muriat, instead of Ammonii Chloridi?

"I fully realize that it is easy to criticize, and that my own prescriptions are far from perfect, but it seems that such Gatling gun examples of polypharmacy, coming from leaders in the profession at this time, demonstrate the absolute necessity for more attention to this subject of prescription writing, in the journals and medical societies."

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

THE CHEMICAL PROPERTIES OF SALVARSAN ("606")

W. A. Puckner and W. S. Hilpert

At the request of the Council's referee for Salvarsan ("606"), its examination was taken up in the Association laboratory. Inasmuch as the statements in articles regarding the chemistry of this new remedy have been somewhat vague, it is deemed of interest to record the following experiments:

The specimen of Salvarsan was contained in a sealed glass tube said to contain 0.6 gm. of the product. To determine its content the tube was weighed, the contents transferred to a beaker, the tube washed out with water, dried and weighed. It was found that the contents of the tube amounted to 0.6510 gm. When the tube was opened a marked wood-spirit-like odor became apparent, probably due to the vapor with which the tube was filled as a means of preventing the decomposition of Salvarsan by air. The powder, which was light yellow in color, when treated with water became a soft, transparent, gelatin-like mass which dissolved to form a clear yellow solution. This solution was made up to 100 c.c. and portions used for the following tests:

TESTS

The solution was distinctly acid to litmus. When sodium hydroxid solution was added gradually, a precipitate appeared, which on further addition of alkali redissolved. The reaction which takes place apparently consists in the liberation of the water insoluble free base; thus, $\mathrm{HCl.NH_2.OH.C_6H_3.As{:}As.C_6H_3.OH.NH_2.HCl + 2NaOH \text{—>} NH_2.OH.C_6H_3.As{:}As.C_6H_3.OH.NH_2 + 2NaCl + 2H_2O}$, the phenolic hydroxyl of which then reacts with the alkali to form the water soluble sodium salt (the phenolate of the base) thus: $\mathrm{NH_2.OH.C_6H_3.As{:}As.C_6H_3.OH.NH_2 + 2NaOH \text{—>} NH_2.ONa.C_6H_3.As{:}As.C_6H_3.ONa.NH_2 + 2H_2O}$. When to the aqueous solution of Salvarsan a solution of sodium carbonate was added, a precipitate appeared, which did not dissolve when further quantities of the alkali carbonate were added.

The solution was not affected when treated respectively with diluted hydrochloric, diluted nitric and diluted sulphuric acids. When the aqueous solution was treated with strong nitric acid a yellowish-white precipitate was produced which redissolved when more acid was added, yielding finally a dark red solution. When the solution was treated with strong sulphuric acid a yellowish-white precipitate was formed which dissolved when more acid was added yielding a solution which at first was almost colorless, then became brown and finally black, apparently through carbonization.

When the solution was treated with a little ferric chlorid solution, a violet coloration, such as is given by many other phenols, was produced, which, on standing became dark red; finally the liquid became turbid. When the solution of Salvarsan was treated with dilute nitric acid and then silver nitrate solution added, a yellow precipitate was produced which rapidly darkened and soon became black. When the Salvarsan solution was treated with an alkaline solution of potassium permanganate and warmed, the permanganate was reduced and an odor of ammonia developed.

When the solution was treated gradually with a tenth-normal solution of iodin, the iodin was reduced as shown by disappearance of the iodin color and it was noted that at the same time the color of the Salvarsan solution became less pronounced. The gradual addition of iodin solution being continued, a colorless liquid finally was obtained. This reaction appears to be perfectly definite and in several experiments for 0.0651 gm. substance 10.5 c.c. tenth-normal iodin was required—this regardless of the dilution.

THE ARSENIC CONTENT

The arsenic content of Salvarsan was determined by treating 10 c.c. of the solution contained in a Kjeldahl flask with 25 c.c. of strong sulphuric acid and digesting this mixture until colorless. The colorless solution so obtained was diluted, neutralized with sodium hydroxid, an excess of sodium bicarbonate added and the arsenic content determined by titration with tenth-normal iodin, a method substantially the same as that used in the examination of atoxyl by W. A. Puckner and A. H. Clark (THE JOURNAL, A. M. A., Sept. 21, 1907, p. 1041).

Ten c.c. of Salvarsan solution containing 0.0651 gm. substance required (*a*) 5.67 c.c., (*b*) 5.71 c.c. or an average of 5.69 c.c. tenth-normal iodin solution, equivalent to 0.0211 gm. arsenic; calculating this on the basis of the weighed contents of the tube it indicates that the product contains 32.41 per cent. of arsenic. As the contents of the tube weighed 0.6510 gm. although the label claimed a content of 0.6 gm. it seemed probable that the excess weight was due to hygroscopic water or possibly to vapors of the substance used to replace the air in the tube.

Calculating the arsenic content on the assumption that the tube contained 0.6 gm. real Salvarsan, 35.16 per cent. of arsenic was indicated. As but a single tube of the material was at our disposal, no extended experiments regarding the arsenic content could be undertaken at this time. In view of this and in view of the difficulty of putting up an exact quantity of a material so unstable as this product, our examination must be taken as a confirmation of the chemical claims made for the product.

THE PRODUCT AND ITS BEHAVIOR

In order that physicians who use this substance may handle it more intelligently the following condensed description of its behavior is given: Salvarsan is an arsenic compound containing that metal in a low state of oxidation and the product is, therefore, a powerful reducing agent and is decomposed by bodies which are oxidizers, including air. The amine groups of the body give it the character of a weak base enabling it to form salts such as the chlorid, the salt that constitutes Salvarsan. Being a weak base, its hydrochlorid, when dissolved in water, is largely decomposed by the latter (hydrolysed) and hence gives a solution having an acid reaction. A solution of Salvarsan is, therefore, acid and will remain so until for every molecule of Salvarsan there have been added two molecules of sodium hydroxid or a similar monovalent base.

Salvarsan also contains two phenol (hydroxyl) groups and in agreement with phenols in general it forms compounds with strong bases (phenolates). When, therefore, the free base from Salvarsan has been precipitated by addition of an alkali and further alkali is added, a clear solution of the sodium salt will result when two further molecules of sodium hydroxid or a similar monovalent base have been added. It is the free insoluble base that is injected subcutaneously and intramuscularly in the form of a suspension and it is the alkaline water-soluble sodium salt which is injected intravenously in the form of a solution.

Marriages

ARTHUR CHARLES STOKES, M.D., to Miss Bertha Shackleford, both of Omaha, December 17.

JAMES DELAVEN HEARD, M.D., to Miss Edith McIlvaine, both of Pittsburg, Pa., December 27.

JOHN M. SPAULDING, M.D., Salt Lake City, to Miss Ella Maxwell of Boise, Ida., December 24.

JOHN W. HAYES, M.D., Cleveland, to Miss Mary Mejer of Chicago, at Buffalo, N. Y., December 16.

JAMES MCCLURE RICHARD, M.D., Salt Creek, Tenn., to Miss Statira Gray of Retro, Tenn., November 21.

C. E. FOWLBE, M.D., Sparrows Point, Md., to Miss Geneva E. Isaacs of Ellicott City, Md., December 12.

FRANK EDWART ARTAUD, M.R.C., U. S. Army, to Miss Annie Alderslade Ball of Key West, Fla., November 9.

DIEDRICH JANSSEN MEENTS, M.D., West Point, Ia., to Miss Violet Ward of Dufur, Ore., at Fort Madison, Ia., November 22.

Deaths

Jeremiah Mason Main, M.D. New York University, New York City, 1859; attached to the U. S. S. *Constitution* at the time of the visit of Commander Perry to Japan; for forty years a practitioner of the Mexican frontier; United States pension examining surgeon at Laredo, Tex., for thirteen years; for fourteen years an attache of the United States Marine-Hospital Service; and for sixteen years city physician of Laredo; died at his home in that city, December 9, from senile debility, aged 84.

Charles E. Stone (examination, Medical Society of California, 1876); a member of the American Medical Association; for sixty years a practitioner of California; a member of the first State Board of Health of California in 1870; president of the Medical Society of Yuba and Sutter Counties; county physician of Yuba County, and superintendent of the Yuba County Hospital; mayor of Marysville in 1876-1877 and 1880-1881; died at his home in Marysville, December 10, aged 82.

Joseph Athanasius McDonald, M.D. Harvard Medical School, 1866; a member of the Massachusetts Medical Society; a member of the legislature from Charlestown in 1866, of the Charlestown School Board from 1869 to 1873, and for eighteen years a member of the Boston School Board; surgeon of the Ninth Infantry,, M. V. M. from 1870 to 1874; died at his home in Charlestown, Boston, December 8, from pneumonia, aged 70.

James M. Wheat, M.D. Albany (N. Y.) Medical College, 1853; a member of the Redlands (Cal.) Medical Society; secretary of the board of health and health officer of Redlands; formerly a resident of Minnesota; from 1875 to 1877 a member of the legislature, and from 1877 to 1887 a member of the senate; died at his home in Redlands, November 27, from cerebral hemorrhage, aged 85.

Napoleon Hickman, M.D. University of Pennsylvania, Philadelphia, 1862; of Philadelphia; a member of the American Medical Association; formerly demonstrator of anatomy in his alma mater; a surgeon of volunteers during the Civil War; United States pension examining surgeon; died at the home of his daughter in Ocala, Fla., December 9, from heart disease, aged 71.

Martin J. Thompson, M.D. University of Alabama, Mobile, 1872; formerly a member of the city board of health, president of the Mississippi State Medical Association, and president of the Lauderdale County Medical Society; died at his home in Meridian, December 5, from the effects of a fractured hip sustained in a runaway accident last winter, aged 65.

Presley C. Hunt, M.D. Georgetown University, Washington, D. C., 1891; formerly a member of the American Medical Association; neurologist to Providence Hospital, Washington; attending physician to St. Ann's Infant Asylum, and the Children's Country Home; died in Johns Hopkins Hospital, Baltimore, December 15, aged 39.

William Steptoe Christian, M.D. Jefferson Medical College, 1851; a member of the Medical Society of Virginia, twice orator, and president in 1904; a Confederate veteran; for several years superintendent of schools of Middlesex County; died at his home in Urbanna, December 15, aged 79.

William M. Holton, M.D. College of Physicians and Surgeons, New York City; 1852; a member of the Indiana State Medical Association; assistant surgeon of the Twenty-Fifth Indiana Volunteer Infantry during the Civil War; died at his home in New Harmony, December 12, aged 83.

David Williams Vander Burgh, M.D. University of Michigan, Ann Arbor, 1866; assistant surgeon of the Tenth Michigan Volunteer Infantry during the Civil War, and acting assistant surgeon, U. S. Army for a year thereafter; died at his home in Fall River, Mass., August 29, aged 68.

Albert R. Fouser, M.D. Hahnemann Medical College, Chicago, 1883; a member of the Desplaines Valley Medical Association; for two years assistant physician at the State Penitentiary, Joliet; died at his home in Canton, Ill., December 9, from disease of the gall-bladder, aged 56.

Ora C. McEwen, M.D. St. Louis College of Physicians and Surgeons, 1897; local surgeon for the Denver and Rio Grande Railway at Farmington, N. Mex., and later a practitioner of Aztec; died in the Territorial Hospital for the Insane, Las Vegas, December 12, aged 35.

Samuel E. Martin, M.D. Eclectic Medical Institute, Cincinnati, 1852; a pioneer practitioner of Kansas; surgeon of the Fifteenth Kansas Volunteer Infantry during the Civil War; died suddenly at his home in Topeka, December 8, from heart disease, aged 84.

Edmund Arthur Donnan, M.D. Jefferson Medical College, 1880; a member of the Medical Society of the State of Pennsylvania; a member of the staff of the Shenango Valley Hospital; died at his home in New Castle, December 14, from pneumonia, aged 55.

William E. Brown, M.D. College of Physicians and Surgeons, Baltimore, 1884; a member of the South Carolina Medical Association; for several terms intendant of the town of Manning; died at his home, December 5, from nephritis, aged 54.

Francis Vincent Ely, M.D. New York University, New York City, 1897; of Pittsburg; a sufferer from epilepsy; died at his home, December 13, from the effects of a gunshot wound of the right temple, self-inflicted with suicidal intent, aged 37.

James H. Denny, M.D. Harvard Medical School, 1867; formerly of Boston; a member of the Massachusetts Medical Society and visiting physician to the Boston City Hospital; died in Vienna, Austria, October 16, aged 71.

Thomas J. Collier, M.D. Tulane University, New Orleans, 1867; of Griffin; a member of the Medical Association of Georgia; died in a sanitarium in Atlanta, December 12, nine days after a surgical operation, aged 69.

William Raleigh Cherry, M.D. Vanderbilt University, Nashville, Tenn., 1901; a member of the Kentucky State Medical Association; died at his home in Morgantown, December 13, from appendicitis, aged 35.

William Church Dake, M.D. University of Nashville of Nashville, Tenn., 1872; a prominent homeopathic practitioner of Nashville; died at his home, December 9, from cerebral hemorrhage, aged 58.

Harriet A. Miner, M.D. Hahnemann Medical College, Chicago, 1890; of Evanston, Ill.; died in Chicago, November 6, from carcinoma of the breast, with metastases to the liver and spleen, aged 46.

Stefano Joseph Hickey, M.D. Jefferson Medical College, 1888; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, December 13, from pneumonia, aged 45.

Jerome A. Hughes, M.D. University of California, San Francisco, 1883; in 1894, coroner of San Francisco County; died at his home in Mill Valley, Cal., December 5, from heart disease, aged 54.

Andrew Goddard, M.D. Memphis (Tenn.) Medical College, 1853; for twelve years surveyor of McClennan County, Tex.; a Confederate veteran; died at his home in Waco, November 30, aged 80.

Felix F. Porter, M.D. University of Pennsylvania, Philadelphia, 1859; assistant surgeon of the Fifth Tennessee Infantry, C. S. A.; died at his home in Paris, Tenn., November 27, aged 72.

William Lambert, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1884; formerly of LaCrosse, Wis.; died at his home in Chattanooga, Tenn., November 26, from pneumonia, aged 54.

William Payne (years of practice, Tex.); for more than 50 years a practitioner of medicine and law; died at his home in Frankfort, Ky., November 7, from senile debility, aged 96.

John Flagg Gardner, M.D. Jefferson Medical College, Philadelphia, 1849; a Confederate veteran; died at his home in Manassas, Va., November 12, from senile debility, aged 85.

Arthur Alexander Chance, M.D. Medical College of Georgia, Augusta, 1884; of Wadley, Ga.; died in the State Hospital, Milledgeville, July 16, from chronic nephritis, aged 42.

C. Perry Sayles, M.D. Michigan College of Medicine, Detroit, 1884; of Kalamazoo; died at Bronson Hospital in that city, December 10, from carcinoma of the intestine, aged 52.

Dexter A. Smith, M.D. University of Georgetown, Washington, D. C., 1884; died at his home in Irving Park, Chicago, December 16, from cirrhosis of the liver, aged 60.

Sarah Grattles Hiatt (license, Kansas, 1870; Texas, 1892); of Mound City, Kan.; died at the home of her niece in Kansas City, Mo., November 2, from peritonitis, aged 72.

William J. Bartmess, M.D. Reform Medical College, Macon, Ga., 1857; a retired practitioner of Ellsworth, Ind.; died at his home, December 3, from septicemia, aged 76.

James Hamilton Morrison, M.D. Texas Medical College, Galveston, 1867; of Hempstead, Tex., died in a hospital in Houston, November 20, after prostatectomy, aged 68.

Charles P. Godfrey, M.D. Geneva (N. Y.) Medical College, 1868; health officer of Cayuta, N. Y.; died at his home in that place, October 10, from tetanus, aged 67.

Cornelius Corboy, M.D. Miami Medical College Cincinnati, 1887, formerly of Cincinnati, died at the home of his sister in Sardinia, Ohio, December 5, aged 52.

James Franklin Dick, M.D. University of Tennessee, Nashville, 1878, died suddenly at his home in Dongola, Ill., December 2, from angina pectoris, aged 63.

George Washington Drawdy, M.D. Atlanta (Ga.) Medical College, 1883, of Jesup, Ga., died suddenly in a restaurant in that city, December 3, aged 60.

James W. Keath, M.D. University of Pennsylvania, Philadelphia, 1876, died at his home in Schaefferstown, Pa., October 15, from tuberculosis, aged 55.

Charles Tessier, M.D. Victoria University, Coburg, Ont., 1883; died at his home in Haverhill, Mass., November 30, from cerebral hemorrhage, aged 57.

Horace William Hammond, M.D. University of Michigan, Ann Arbor, 1876, died at his home in Luther, Mich., November 29, from paralysis, aged 61.

William L. Bettis, M.D. Marion Sims Medical College, St. Louis, 1895, died at his home in Harrisonville, Ill., November 26, from uremia, aged 45.

Rosalie Senftenberg, M.D. National Medical University, Chicago, 1894, died at her home in Weyauwega, Wis., October 28, aged 70.

Daniel V. Moyer, M.D. College of Physicians and Surgeons, Baltimore, 1882, died at his home in Maryland Line, Md., November 9.

James R. Berry, M.D., Tulane University, New Orleans, 1880, died at his home in Columbia, Miss., September 29, aged 54.

Jett Theodore Keith, M.D. Keokuk (Iowa) Medical College, 1901, died at his home in Wichita, Kan., November 30, aged 36.

Robert C. Blair, M.D. McGill University Montreal, 1865, formerly of Quebec, died in Chicoutimi, Quebec, November 12.

Julian E. Phinney, M.D. Rush Medical College, 1889, of Harrison, Neb., died in Norfolk, Neb., October 25, aged 50.

Edward Augustus Reed, M.D. University of Louisville, Ky., 1891, died at his home in Knoxville, Tenn., November 25.

Orin S. Bonsteel, M.D. Geneva (N. Y.) Medical College, 1850, died at his home in Ypsilanti, Mich., December 7, aged 85.

William B. Hardy, M.D. Jefferson Medical College, 1856, died at his home in Belleville, Kan., December 6, aged 78.

Miscellany

A Collecting Letter.—One of New York's prominent nose and throat specialists uses the following letter form as a note on statements of accounts past due. In his work, as in ours, says the *Dental Digest*, accounts sometimes run long past the date on which they should be paid. He practices where expenses are high and competition keen. Here, as everywhere, the value of a pleasant personality is great, and business procedures should be courteous as well as firm.

> *Dear Sir:* Permit me to draw your attention to the enclosed bill which has been rendered to you on —— (here are filled in the dates on which statements were rendered). It is customary for me to turn my accounts unpaid after six months to my attorney, Mr. John Smith, —— Broadway, New York City, as my practice does not permit me to give them personal attention after that time. I am sure this matter has simply been overlooked and that bringing it to your notice will secure it prompt attention.
>
> I am sending this letter by registered mail believing that I may have had your address incorrect.

The Doctor makes the following interesting comments on this letter and its effects: "This letter assumes their desire to pay. It puts part of the blame on them, and assumes part of it for me, as I say I may have had their address wrong. It makes some of them feel rather ashamed, and brings remittances from many. Once in a while some man will come in with one of these letters and say, 'What do you mean by sending me a letter like this?' and he will follow it up with a lot of talk. I let him talk it all out without interrupting him. Then I say, 'You musn't come into my office and talk to me like that, because I am a pretty decent sort of a fellow and don't deserve it. You must know that I am not in practice for the love of it. If I were, I should have transferred your account to the charity side of my ledger and you wouldn't like that. All that is necessary is that you send me a check, and we will be on good terms again.'"

The result of these tactful and firm methods is that in a long list of accounts, in a form of practice notorious for poor collections, this practitioner has less than a dozen old accounts, and nearly all of these are in process of payment by installments.

Efficient Cholera Prophylaxis.—The high degree of efficiency which characterizes the work of the Medical Department of the Army, says the *Army and Navy Journal*, has been nowhere better illustrated than in the Philippine Islands, where in the fiscal year 1909 there was not a case of cholera among the American troops, although the scourge counted thousands of victims among the natives. In the provinces there were 8,055 cases, with 5,524 deaths, these figures being below the actual number on account of the disposition of the natives to conceal all cases. In Manila there were 263 cases, with 211 deaths, the death percentage being slightly above 80. In numerous towns adjacent to military posts the disease was epidemic at some period during the year, but so thorough was the medical inspection and so vigilant the attention of the military surgeons that not a single case of cholera appeared among our troops. This achievement Surgeon-General Torney, in his interesting annual report, thus modestly refers to: "The absence of this disease among American officers and enlisted men and their families under such circumstances is excellent proof of the thoroughness and effectiveness of the sanitary measures employed. The Americans have been thoroughly imbued with the importance of abstaining from eating uncooked native vegetables and of using only sterilized water for drinking." In the native soldiery there were only nine cases with seven deaths, figures that testify to the salutary influence of the Army system of sanitation even with people accustomed for centuries to conditions of living that foster such diseases as cholera.

CLIPPINGS FROM LAY EXCHANGES

AUTOS ARE POLISHED—WHY NOT CHAUFFEURS?

Wanted: Situation as "Chauffeur" by a responsible, good looking, highly polished young physician, single and rare ability.—Advt., N. Y. *Herald*, November, 1910.

UNDIFFERENTIAL DIAGNOSIS

"T. C. N—— is still in Cleveland. A diagnosis of his case has been made but it has not as yet been determined just what his ailment is."—Painesville, Ohio, paper.

A BUSTER OF A GIRL

"So high is the temperature of Miss E—— M——, a fever patient, that the bulbs of three thermometers placed beneath her tongue by physicians burst after the mercury had registered the highest figure on the graduated scale."—*Daily News*, Chicago, Nov. 16, 1910.

NEW USE FOR STEEL MAGNATES

"He was taken to the office of Dr. H—— where is was necessary to temporarily remove the eye ball from the socket and extract the steel with a strong magnate."—Rockford (Ill.) *Republic*, Nov. 29, 1910.

THIS MUST MEAN A JOB IN THE STOCK-ROOM

"Dr. —— has accepted a position on the staff of the Laying In Hospital of the City of New York."—Rome (Ga.) *Tribune*, Nov. 25, 1910.

SURGICAL PSYCHIATRY

"Architects are drawing plans for a new syncopathic department for the Nugent Sanatorium, Wauwatosa."—Milwaukee *News*, Nov. 12, 1910.

THIS FACT IS EMPHASIZED

"When he was kicked in the fact by a horse."—Johnstown (Pa.) *Democrat*.

BIRDS OF A FEATHER CLASSED TOGETHER

"John L—— died * * * last evening of chronic intestinal nephritis."—Johnstown (Pa.) *Democrat*.

A HEARTQUAKE

"His death was attributed to an acute form of neuralgia of the heart which to medical men is known as pectoralis agitans."—Lorain (Ohio) *News Herald*, January 10.

GENERAL INDEX

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SOCIETIES

Abbreviations

Acad —Academy
Am —American
A —Association
Conf —Conference
Cong —Congress
Hosp —Hospital
Internat —International
M —Medical, Medicine
Pharm —Pharmaceutical
Phys —Physicians
Ry —Railway
S —Society
Surg —Surgical, Surgery, etc

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CURRENT MEDICAL LITERATURE

INDEX OF SUBJECTS

Explanation The *reading matter which appeared in* THE JOURNAL *is not indexed here*, except the original articles and the abstracts of original articles This index refers to the titles and the subjects of original articles published in the leading medical journals of the world, including THE JOURNAL, during the past six months The titles of the articles and the names of the journals in which they appeared were listed weekly in the Current Medical Literature Department, and it is to them that references are here made The figure in parentheses refers to the paragraph, the number following to the page in THE JOURNAL For instance, "Abdominal Aorta, Graft of Vena Cava on, (119) 1684—ab," refers to page 1684 of THE JOURNAL, on which is found in paragraph numbered 119, the title of the paper and the name of the author, viz, "Graft of Vena Cava on Abdominal Aorta A Carrel" This title is listed under the journal in which the article appeared, the *Annals of Surgery*, October, 1910 When "ab" follows a page number it indicates that the article was abstracted in THE JOURNAL, for instance, "Abscess, Liver, (89) 801—ab" On page 801, paragraph 89, will be found an abstract of this article, which appeared in *Surgery, Gynecology and Obstetrics* August, 1910 Titles of articles which appeared originally in THE JOURNAL are indicated in the index by an asterisk (*) before the page number, for instance, "Abscess, Appendicular, Localized Treatment of, *363," refers to page 363 of THE JOURNAL, on which is found the complete original article The index to authors of all articles, both original and those listed under Current Medical Literature, appears separately on pages 2411 to 2428 of this Index.

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